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Improvement of Basic Math Skills Through Realistic Mathematics Education (RME) in Early Childhood

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Abstract
Realistic Mathematics Education (RME) is appropriate for basic education. It bridges abstract to concrete and useful Mathematics. RME emphasizes the importance of real contexts familiar to students and the process of constructing them. This study aims to determine the effect of RME on the ability of basic mathematical skills. The method used is Single Subject Research model experiment with two samples in the A-B-A' design. The results of the study: (1) The subjects before the treatment showed low basic mathematical abilities; (2) Learning activities with the RME approach are effective for improving basic math skills; and (3) the condition of the subjects after being given RME approach is in very good category. It can be concluded that RME has contributed to improve student learning outcomes and make learning more meaningful as learning is always associated and relevant with the reality of children's lives through selected themes.

Keywords: *basic mathematics skill; early childhood education; realistic mathematics education (rme).*

Abstrak
Pendidikan Matematika Realistik (PMR) tepat digunakan pada pendidikan dasar, karena menjembatani matematika yang abstrak menjadi konkrit dan bermanfaat. PMR menekankan pentingnya konteks nyata yang dikenal siswa dan proses mengkontruksi. Penelitian ini bertujuan mengetahui besar pengaruh PMR terhadap kemampuan keterampilan dasar matematika. Metode yang digunakan adalah eksperimen model *Single Subject Research* dengan dua sampel dalam disain A-B-A'. Hasil penelitian: (1) Kedua subjek sebelum adanya perlakuan menunjukkan kemampuan dasar matematika yang rendah; (2) Kegiatan pembelajaran dengan pendekatan PMR efektif untuk meningkatkan keterampilan dasar matematika; dan (3) Kondisi subjek setelah diberikan pendekatan PMR menunjukkan pada kategori sangat baik. Secara umum dapat disimpulkan bahwa PMR telah berkontribusi dalam peningkatan hasil belajar siswa dan menjadikan pembelajaran lebih bermakna. Seperti pembelajaran selalu dikaitkan dengan relalita kehidupan anak dan relevan dengan kehidupan anak melalui tema-tema yang dipilih.

Kata kunci: *keterampilan dasar matematika; pendidikan anak usia dini; pendidikan matematika realistik (pmr*).

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INTRODUCTION

Achievement in students' mathematics in Indonesia in PISA 2003 is still not satisfactory, which is ranked 38th out of 40 countries. It's always in the lower rank (Wijaya, 2012). Noyes believes that many students are more likely to be trained to do mathematical calculations than to be educated for mathematical thinking (Noyes, 2007:11). Mathematics plays an important role in organizing the human thought process and accelerating the mastery of technology because of mathematics as a means of thinking. Mathematics should be seen as a thought process. The thought process consists of receiving information, processing, collecting, and recalling that information from a student's memory.

In line with Soedjadi, mathematics serves as a way to think, an understanding of patterns and relationships, as a tool, and as a language (Soedjadi, 2000); (Supardi, 2015); (Vandini, 2016); and (Yuliyani et al., 2017) In this case, the mathematics learning applied in the school today is a very important basis in its participation in smarting the life of the nation. Of course, the achievement of the target of "smartening the life of the nation", will remain fresh fit and tough to meet competition in the era of globalization and the advancement of science and technology, applied to the competition of the industrialization era in all aspects of life relevant to the rapidly evolving advancement of information and communication

The results showed that: There is a significant influence between mathematics learning and Indonesian Realistic Mathematics Education on the understanding of students' concepts and logical thinking and understanding of student concepts (Widyastuti & Pujiastuti, 2014); (Adjie, Putri, & Dewi, 2019). Idris points out that mathematics learning with the RME approach has improved the results of learning mathematics (Nopiyani, Turmudi, Prabawanto, & S., 2018). Other research results (Oftiana & Saefudin, 2017); (Wijaya, 2012); (Saputro, Prayito, & Nursyahidah, 2015) and (Indira, Somakim, & Susanty, 2018)) show that RME or often also called Indonesia Realistic Mathematics Education has been able to improve students' learning outcomes. On the other hand, the results of research related to basic mathematical skills have been conducted by (Withasari, 2018). The study results imply that "tangram" games could be one way to improve the ability to classify two-dimensional numbers. (Aisyah, Amry, & Salim, 2019), that the cognitive abilities of children in Group B of Lalowaru State Kindergarten moramo district of South Konawe Regency can be improved by classifying objects in three categories (shape, color, and size).

In the field observation, mathematics learning in Early Childhood Education pays less attention to real-world examples. The learning itself is often done using two-dimensional media (pictured). At the same time, mathematics learning materials emerge from the real world, therefore the development of mathematical learning materials due to the human need to deal with the problems of this life. Thus understanding basic mathematical skills, such as grouping, sorting, comparing, summing, and collecting, is very important to master early on. So that, a phenomenon or an event can be used as an example in learning mathematics. Therefore, this research will raise the theme of research related to the influence of the RME approach on the ability of basic mathematical skills.

This research is limited by the following: (a) The learning process that begins with the preparation of the Learning implementation plan and the preparation of teaching materials; (b) Improvement of the basic math skills of early childhood education students through the application of the RME Approach in learning aspects of cognitive development of mathematics. The formulation of the problem is: (1) What is the level of basic ability of early childhood mathematics before learning with the RME approach?; (2) What is the basic level of mathematics of early childhood after learning with the RME approach?; and (3) How much is the basic level of math skills of early childhood after learning with the RME approach?

This research is a continuation of previous research which focused on cognitive aspect development, particularly the cognitive development of mathematics. The development of these aspects uses a realistic mathematics learning approach, which is thought to be effective in improving student learning outcomes.

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he aim of this study is to comprehensively analyze the achievement and improvement of students' basic mathematical skills between before and after learning with the PMR approach. It is also intended to find out how big the level of basic mathematics abilities in early childhood after learning with the PMR approach is.

The urgency of this research are: (1) Theoretically, it will provide a reference for the validity and reliability of learning mathematics with the PMR approach to the achievement and improvement of basic math skills of PAUD students; (2) Practically, it will provide direct benefits for teachers or prospective PAUD teacher students in developing skills in teaching mathematics to students; and (3) Teachers or teacher's candidates to get direct experience of the learning process with the PMR approach. This hands-on experience will be very useful when they design and implement a lesson in the classroom

The characteristics of realistic mathematics consist of: 1) The use of context, which consists of the real world, mathematics and reflection, abstraction, and mathematization in applications; 2) Vertical instruments consisting of concrete, images, and abstracts; 3) Linkage in thematic learning; 4) The contribution of students from informal methods to formal methods; and 5) interactive activities, in the form of negotiation, explanation, justification, agree, disagree, question or reflection.

The principles of realistic mathematics are guided reinvention and didactional phenomenology, progressive mathematization, and self development models. Meanwhile, the objectives and benefits of realistic mathematics learning are that learning mathematics is more interesting, considering students' abilities, facilitating the solving of mathematical problems; solution (good algorithm), and using context.

The learning process developed is indicators that related to classifying, pairing, sorting, comparing, adding, and subtracting. Classifying, pairing, sorting, and comparing indicators are prerequisites for learning to add and subtract. The learning process was investigated in a single subject research method, using the A, B, A' design.

METHODOLOGY

The type of research used is experimental research. Experiments are observations under artificial conditions in which they are created and regulated by researchers. According to (Sugiyono, 2012) experimental research methods are methods used to look for the influence of certain treatments on others under controlled conditions. While according to Creswell, experimental research is a study that seeks to determine whether a treatment influences the results of a study. The model of experimentation used is experimental research with single-subject research design (Creswell, 2013) . Single Subject is a design that continuously or repeatedly applies treatment to research subjects (Creswell, 2013b). This study will look at the influence of Realistic Mathematics Education on the communication skills of children aged 5-6 who are given repeated treatment on the study subject.

Single Subject research design pattern used is a form of design A-B-A'. A is the condition before being given the treatment (baseline-1), B is the intervention, and A' is the condition after the treatment (baseline-2). This A-B-A' design uses initial observation to define baseline A as the initial function before pretest, then administers and ends with baseline A'. The design can be described in Figure 1.

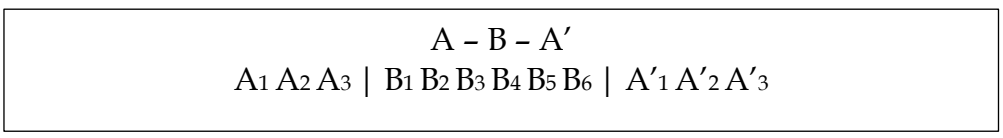

Figure 1: Single Subject Research Design

Research site in Keluran Munjuljaya, District / District Purwakarta, West Java. The subjects in this study were two male children, namely AR and HF. AR and HF are 5 years old

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and the first child. Considering the current state of the Covid-19 Pandemic in Indonesia and even around the world, researchers chose it because of its location in the same area as the researchers, so it is considered safe to be close. In addition, the two have not entered Early Childhood Education due to the Covid-19 pandemic, which is waiting for the age of 6 years. According to observations, AR and HF have normal knowledge and skills, do not show symptoms of mental retardation and are fostered by parents with a good educational background.

The implementation of the study was conducted as many as 12 sessions, where three sessions are baseline phase 1 (A), six sessions are intervention phase (B1), and three sessions are baseline phase 2 (A'). The implementation steps are as follows: (1) Baseline 1 (A) to determine the subject's initial ability in basic mathematical skills without being given intervention. A total of 3 sessions are conducted in the hope that stability can be achieved; (2) Intervene six meetings with a minimum duration of 30 minutes. This duration is determined based on the condition of the subject. If the subject is happy to participate in the activity, then intervention can be given until the subject feels saturated and bored; (3) Baseline 2 (A') which is to find out if there is an improvement in basic math skills in early childhood after being given intervention through RME,

Instruments used are tests of deeds related to matching, comparing, classifying, and summing/subtraction. And indicators developed into 12 points, namely: Pairing the same property, Pair several different properties, pair numbers, match objects with number symbols, compare large vs small, Arrange sequences by size, Arrange 1st, 2nd, 3rd, etc., classify objects by size large or small, length or short, little or large, classify similar objects, classify objects of the same number, combine the merged elements into one, and separate the elements eliminated. Scoring is created in three categories: 1= Undeveloped, 2 = Start Growing, 3 = Growing As Expected, and 4 = Growing Very Well.

The data is presented in table, shapes and graphs, then analyzed according to the needs according to the formulation of the problem. Data analysis is the final stage before drawing conclusions. Generally, in experimental research, hypothesis testing techniques used is t-test, because this study is Single Subject Research (SSR), where the sample is very few, hence the withdrawal of conclusions using nonparametric statistics (Creswell, 2013a).

The steps are taken in analyzing the data are as follows: (1) Calculate scoring results at baseline condition 1 (A) of each subject in each session; (2) Calculate the assessment results on the intervention condition (B) of the subject in each session; (3) Calculate scoring results at baseline condition 2 (A') of each subject in each session; (4) Create a research table for scores that have been obtained at baseline conditions 1 (A), intervention conditions (B), and baseline 2 (A'); (5) Compare scoring results in baseline conditions 1 (A), intervention score (B) and baseline 2 (A'); (6). Create a data analysis of the shape of the line chart so that the changes that occur from the three phases; (7) Make analysis in conditions and and between conditions.

In this study, data analysis was conducted using data analysis in conditions and analysis of data between conditions (Sunanto, J., Takeuchi, K., & Nakata, 2005).

RESULTS AND DISCUSSION

The study results aim to comprehensively analyze the achievement and improvement of students' basic math skills between before and after learning with the RME approach. The implementation of the study began on August 3, 2020, until September 20, 2020, with three categories of activities, namely: 1) held a pretest three times, 2) held the treatment six times, and held the posttest three times. Learning is carried out with steps: 1). Learning begins with contextual problems taken from the real world; 2) Abstract and models and models must bridge real worlds must conform to the level of abstraction that students must learn; 3) Students can use their own strategies, languages, or symbols in the process of maths their world; 4) The learning process must be interactive; and 5) Relationships between parts in mathematics, with other disciplines, and with real-world problems are necessary as a unit that

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hooks each other up in problem-solving. After the treatment is completed, the next activity is to hold postes, to measure how much the increase is compared to before the treatment is carried out. A description of the results of the study is presented in the following description at Table 1.

Table 1: AR Subject Scoring Data (Maximum Score 48)

Session	Baseline (A)		Baseline (B)		Baseline (A')	
	Score	%	Score	%	Score	%
1	12	25	15	31,25	35	72,92
2	12	25	18	37,50	40	83,33
3	12	25	22	45,83	45	93,75
4	-	-	28	58,33	-	-
5	-	-	30	62,50	-	-
6	-	-	40	83,33	-	-
Mean	**12**	**25**	**25,5**	**53,13**	**40**	**83,33**

Based on table 1, ar subjects from three sessions scored 12 or 25% in the first session. At Baseline (B) the score continued to increase from the first session to the last session, which was from the original 31.25 %, equal to 83.33%. While At baseline stage 2 (A') obtained from the calculation of the basic math skills test after being given treatment or intervention in the first session up to the session to the three subjects AR gained a percentage that continued to increase from 72.92 % to 93.75 %. Average levels are 25 %, 53.13 %, and 83.33%, respectively. If the table is used as a chart, it will form a chart like the following at Figure 2.

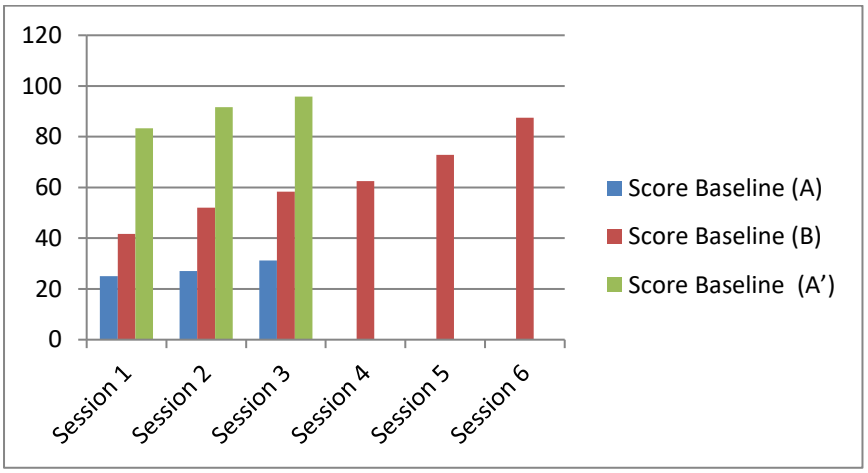

Figure 2: AR Subject Scoring (%)

Furthermore, the data is analyzed in conditions and between conditions. Analysis in Conditions shows the following: 1) The length of conditions for baseline 1 (A) is three sessions, then in intervention (B) i.e. six and at baseline 2 (A'), i.e. three sessions; 2) Based on the split middle method that has been used, the estimated ar subject direction trend at baseline 1 (A) indicates a flat direction, at baseline (B) the trend of direction indicates an increase, while at baseline (A') the trend of direction indicates an increase. Financial stability is determined using 15% stability criteria. If stability is in the percentage range of 85-90%, it can be stable. Whereas if below the percentage then it can be said to be unstable. Based on baseline phase stability calculation 1 (A) can be said to be stable. But not so in phases B and A', based on the calculation of the stability of the intervention phase (B), can be said to be unstable. Trace data on baseline condition 1 (A) is flat, trace data on intervention condition (B) is increased while trace data at baseline condition 2 (A') is also increasing. The level of stability is determined by looking at

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the stability tendencies in each condition. Then the range can see the lower limit and upper limit on each condition. The stability level in baseline phase 1 (A) of the data obtained shows stability with a range of 25 % – 25%. In the intervention phase (B) the data obtained shows instability with a range of 31.25 % - 83.33 %. While in the baseline phase 2 (A') the data obtained shows a relatively stable range of 72.92 % - 93.75 %. For level changes in baseline phase, 1 (A) are 0% with a sign (=) which means the data does not change, the level change in the intervention phase (B) is (52.00 %) with a sign (+) which means that the level increase and change in baseline phase 2 (A') is (20.83 %) with a sign (+) which means that there is also an increase in

From all the analysis calculations in the above conditions, the following data recapitulation of basic math skills research results in AR Subjects in baseline phase 1 (A), intervention (B) and baseline 2 (A') can be Table 2.

Table 2: Recapitulation of Analysis Results in AR Subject Conditions

No.	Conditions	Baseline 1 (A)	Baseline (B)	Baseline 2 (A′)
1	Length of Condition	3	6	3
2	Estimated Directional Trend	Flat	Increased	Increased
3	Stability Tendencies	100 % Stable	52 % Unstable	20,83 % Relatively Stable
4	Data Trace	=	+	+
5	Stability and Range Levers	25 % – 25 % Stable	31,25 % - 83,3 % Unstable	72,92 % - 93,75 % Relatively Stable
6	Level Change	25 % - 25 % (0 %)	31,25 % - 83,3 % (52,00 %)	72,92 % - 93,75 % (20,83 %)

After being analyzed in conditions, the next analysis of the conditions, namely: the number of variables changed, changes in direction and effect tendencies, changes instability, changes in levels and overlapping data. The number of variables changed from baseline phase 1 (A) to intervention phase (B) and from intervention phase (B) to baseline phase 2 (A') amounts to 1. The way to determine the change in direction tendency with its effect is to calculate the trend of direction on the analysis in the condition. The trend change of direction in baseline phase 1 (A) to intervention phase (B) is increasing even in the intervention phase (B) to baseline phase 2 (A') is increasing. To determine the change instability can be seen from the analysis results in the conditions that have been done. Changes in stability tendencies in baseline phase 1 (A) to intervention phase (B) are unstable to stable. While in the intervention phase (B) to baseline phase 2 (A') is stable to stable. The way to determine the level change is to calculate the difference between the amount of data in the last session of baseline phase 1 (A) and the data in the first session of the intervention phase (B) and the data in the first session of baseline phase 2 (A'). If an increase is given (+), if the decrease is given (-) and if the change is not marked (=). Changes in the level of research on AR subjects. in baseline phase 1 (A) to intervention (B) and from the intervention phase (B) to baseline 2 (A') increased by the number of + 58.3 for improvement from baseline phase 1 (A) to intervention (B) and + 10.45 for improvement from the intervention phase (B) to baseline 2 (A'). Determining overlapping data can be done by: (1) Specifying the upper and lower limits in the baseline phase (A) and the intervention phase (B); (2) Calculate the amount of data in the incoming intervention phase in the baseline phase data range 1 (A) and the data in baseline phase 2 (A') entered in the intervention phase data range (B); (3) After obtaining the data, then divided into the number of sessions in the intervention phase (B) and baseline phase 2 (A'). If data in the baseline phase (A) is more than 90% overlapping on the intervention condition (B), this means the effect of intervention on target behavior cannot be assured (Sunanto, 2005). Based on the acquisition of the above data can be concluded that the influence of Realistic Mathematics Education

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interventions on the basic math skills of early childhood is good.

Next describes the results of the study on hf subjects, and the results are summarized in the following Table 3.

Table 3: HF Subject Scoring Data (Maximum Score 48)

Session	Baseline (A)		Baseline (B)		Baseline (A')	
	Score	%	Score	%	Score	%
1	12	25,00	20	41,67	40	83,33
2	13	27,08	25	52,08	44	91,67
3	15	31,25	28	58,33	46	95,83
4	-	-	30	62,50	-	-
5	-	-	35	72,92	-	-
6	-	-	42	87,50	-	-
Mean	**13,33**	**27,78**	**30**	**62,50**	**43,33**	**90,28**

Based on table 3 above in the first session, HF subjects get a percentage of 25% with a gain score of 12. Meanwhile, in the second and third sessions there was an increase of one point and two points, which was 13 (27.08 %) and 15 (31.25 %). At baseline 1 (A) the highest score obtained by HF is 15. In this phase the session is done 3 times to get stable initial data results. If it is stable, the researcher continues on the intervention session (B). In the table above shows that in the first session the HF subject gets a score or percentage continuously increased from the first session to the last session, i.e. from the beginning of the first session 41.67 % equals 87.50 %. While at baseline (A') from the first session up to the third session the HF subjects gained an increasing percentage. And if created the chart is as follows at Figure 3.

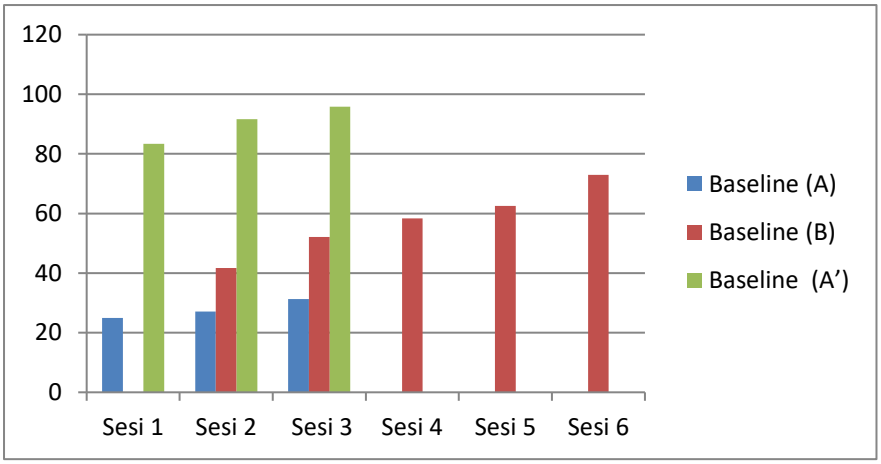

Figure 3: Scoring (%) HF Subjects

Furthermore, the data is analyzed in conditions and between conditions. Analysis in Conditions shows the following: 1) The length of conditions for baseline 1 (A) is 3 sessions, then in intervention (B) i.e. 6 and at baseline 2 (A') i.e. 3 sessions; 2) Based on the split middle method that has been used, the estimated hf subject direction trend at baseline 1 (A) indicates a flat direction, at baseline (B) the trend of direction indicates an increase, while at baseline (A') the trend of direction indicates an increase. Financial stability is determined using 15% stability criteria. If stability is in the percentage range of 85-90%, it can be stable. Whereas if below the percentage then it can be said to be unstable. Based on baseline phase stability calculation 1 (A) can be said to be stable. But not so in phases B and A', based on the calculation of the stability of the intervention phase (B) can be said to be unstable. Trace data on baseline condition 1 (A) is flat, trace data on intervention condition (B) is increased while trace data at baseline condition 2 (A') is also increasing. The level of stability is determined by looking at

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the stability tendencies in each condition. Then the range can see the lower limit and upper limit on each condition. The stability level in baseline phase 1 (A) of the data obtained shows stability with a range of 25 % – 31.25% . In the intervention phase (B) the data obtained shows instability with a range of 41.67% - 87.50 %. While in the baseline phase 2 (A') the data obtained shows a relatively stable range of 83.33 % - 95.83 %. For the level change in baseline phase 1 (A) is 6.25 % with a sign (=) due to relatively small changes, which means the data does not change, the level change in the intervention phase (B) is 45.83 %) with a sign (+) which means that the level increase and change in baseline phase 2 (A') is 12.50 % with the sign (+) which means that it also increases

From all the analysis calculations in the above conditions, the following data recapitulation of the results of basic mathematical skills research on HF Subjects in baseline phase 1 (A), intervention (B) and baseline 2 (A') can be Table 4.

Table 4: Recapitulation of Analysis Results in HF Subject Conditions

No.	Conditions	Baseline 1 (A)	Baseline (B)	Baseline 2 (A')
1	Length of Condition	3	6	3
2	Estimated Directional Trend	Flat	Increased	Increased
3	Stability Tendencies	93,75 % Relatively Stable	45,83 % Unstable	12,50 % Relatively Stable
4	Data Trace	=	+	+
5	Stability and Range Levers	25 % – 31,25 % Relatively Stable	41,67 % – 87,50 % Unstable	83,33% – 95,83% Relatively Stable
6	Level Change	25 % - 31,25 % (6,25 %)	41,67 % – 87,50 % (45,83 %)	83,33% – 95,83% (12,50 %)

After being analyzed in conditions, the next analysis of the conditions, namely: the number of variables changed, changes in direction and effect tendencies, changes instability, changes in levels and overlapping data. The number of variables changed from baseline phase 1 (A) to intervention phase (B) and from intervention phase (B) to baseline phase 2 (A') amounts to 1. The way to determine the change in direction tendency with its effect is to calculate the trend of direction on the analysis in the condition. The trend change in direction in baseline phase 1 (A) to intervention phase (B) is increasing, and even in the intervention phase (B) to baseline phase 2 (A') is increasing. To determine the change instability can be seen from the results of the analysis in the conditions that have been done. Changes in stability tendencies in baseline phase 1 (A) to intervention phase (B) are unstable to stable. While in the intervention phase (B) to baseline phase 2 (A') is stable to stable. The way to determine the level change is to calculate the difference between the amount of data in the last session of baseline phase 1 (A) and the data in the first session of the intervention phase (B) and the data in the first session of baseline phase 2 (A'). If an increase is given (+), if the decrease is given (-) and if the change is not marked (=). The level change in baseline phase 1 (A) is 6.25 % with a sign (=) which means the realtive data is stable, the level change in the intervention phase (B) is (45.83 %) with a sign (+) which means that the level increase and change in baseline phase 2 (A') is (12.50 %) with a sign (+) which means it is also increasing, but can be said to be relatively stable. Determining overlapping or overlapping data can be done by: (1) Specifying the upper and lower limits in the baseline phase (A) and the intervention phase (B); (2) Calculate the amount of data in the incoming intervention phase in the baseline phase data range 1 (A) and the data in baseline phase 2 (A') entered in the intervention phase data range (B); (3). After obtaining the data, the session is divided into intervention phases (B) and baseline phase 2 (A'). If data in the baseline phase (A) is more than 90% overlapping on the intervention condition (B), this means the effect of intervention on target behavior cannot be assured (Sunanto, 2005). Based on the acquisition of the above data can be concluded that the

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effect of Realistic Mathematics Education (PMR) intervention on the basic math skills of early childhood is good.

Discussion, Subjects with ar and HF initials are 5-year-olds ith basic math skills that are still not optimal. Based on brief interviews with both parents of the subject. The subjects of AR and HF were raised in families where both parents worked. This resulted in a lack of intensive parenting from both men. Relying solely on his large family (Grandparents and his siblings).

In the intervention phase (B) data retrieval was conducted as many as 6 sessions, each data increased from session to session. In the first session ar subjects gained 31.25% and continued to increase equally, with the third session getting 83.33%. While the HF in the first session got 41.67 % and continued to increase until the sixth session got 87.50 %. The condition indicates an improvement from baseline phase 1 (A) to intervention (B). If in the baseline phase 1 (A) ar and HF subjects can only demonstrate basic matching skills, in the intervention phase basic math skills are increasing as realistic mathematics education (RME) is applied. Session 6 is the last session in the intervention phase (B), in this session almost all indicators have increased from the previous session. The activity performed in session 6 is to play yag contains mathematical elements.

Almost all indicators on this research instrument are well achieved. There is only one indicator that takes longer to achieve than other indicators, namely summing and subtraction skills that require understanding the language in a long sentence.

Data retrieval in baseline phase 2 (A') is done with 3 sessions. In session 1 AR subjects gained 72.92 %, 83.33 %, and 93.75% in a row. While HF subjects gained 83.33%, 91.67 %, and 95.83. AR and HF subjects have improved from phase to phase. In baseline phase 1 (A) to intervention phase (B) the point increase reached 6.25% for AR subjects and 10.42% for HF subjects. While the percentage increase for the entire phase series is 68.75% for AR subjects and 70.83% for HF subjects. This means the trend of direction and the level of change in both subjects is increasing from phase to phase. From the trend, the direction and level of AR and HF changes are increasing in each phase

This means that the trend of direction and level of change in both subjects is increasing from phase to phase. After performing analysis between previous conditions, it is known that the overlap data in each subject is relatively small from baseline phase 1 (A) to intervention phase (B) and from intervention phase (B) to baseline phase 2 (A'). The amount of data that overlaps in the results of the study shows the degree of effect of intervention on target behavior to be changed. The smaller the percentage of data overlapping in a study, the better the influence of interventions made (Sunanto, J., Takeuchi, K., & Nakata, 2005). Thus the provision of RME interventions has a good influence on improving basic mathematical skills on AR and HF subjects.

The results of the study (Widyastuti & Pujiastuti, 2014) show that there is a significant effect between learning mathematics and PMRI in learning mathematics with distance and speed material on understanding concepts and students' logical thinking for fifth grade of Elementary School group II in Umbulharjo District, Yogyakarta City. Research that has been carried out (Adjie, Putri, & Dewi, 2019). The result of learning is also aimed to understand the concept of numbers and learning in PAUD after using PMR have progressed very well, which is shown in the work on the assignment sheet which being answered correctly.

There are three principles in realistic mathematics learning: guided reinvention/progressive mathematizing, didactical phenomenology and self developed models (Gravemeijer, 1994:91). Furthermore, the three principles are operated into five basic characteristics of realistic mathematics learning, namely: (1). Use contextual problems; (2). Use the model. The use of models, schemes, diagrams, symbols and so on is a bridge for students from concrete situations to abstracts. Students are expected to develop their own models; (3). Use student contributions; (4). The presence of interaction. The process of

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constructing and producing problem-solving is certainly not possible on its own; and (5). There is a connection between parts of the subject matter. The structure and concepts of mathematics are interconnected, therefore the interconnectedness between topics must be unearthed to support more meaningful learning.

Based on the results of research and theories presented above the use of RME can improve the basic skills of mathematics in early childhood. This is because the RME approach is very attractive to the child, because it starts concrete things that are around the child.

CONCLUSION

Realistic Mathematics Education (RME) is appropriate for basic education. It bridges abstract to concrete Mathematics. This study aims to determine the effect of RME on the ability of basic mathematical skills using Single Subject Research model experiment with two samples A-B-A' design. The results of the study: (1) The subjects before the treatment showed low basic mathematical abilities; (2) Learning activities with the RME are effective for improving basic math skills; and (3) the condition of the subjects after RME approach is in very good category. It can be concluded that RME has contributed to improve student learning outcomes.

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