

THE EFFECTS OF RME APPROACHES ON MOTIVATION AND LEARNING ACHIEVEMENT OF STUDENTS THROUGH THEMATIC-INTEGRATIVE LEARNING

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Abstract

The purpose of this study was to determine the effect of Realistic Mathematic Education (RME) on motivation and academic achievement through integrative thematic learning among fourth grade students of elementary school in Ujung Parepare District. The population was 4th in the district Ujung Parepare that have implemented the 2013' curriculum and to determine the sample used simple random sampling technique. This study was a quasi-experimental research design, with nonequivalent pretest - posttest - groups design. The experimental class was students of class IV SD Negeri 44 Parepare (n=25) and control class was students of class IV SD Negeri 22 Parepare (n=34). Using a significance level = 5 % can be concluded that : Thematic-integrative learning approach Realistic Mathematic Education has significant effect on motivation and academic achievement in elementary school than conventional usual thematic learning-integrative because students play an active role in the success of learning, students do not become passive and are not just listening to the material being taught.

Keywords : RME approach , learning motivation , learning achievement

INTRODUCTION

Improving the quality of learning in schools always get continuous improvement. Repair and improvement of teaching in schools, among others by changes in school curriculum by the government. Curriculum changes that occur are common. The government started the new academic year 2013/2014 implementing the new curriculum in most levels of schooling. The curriculum is curriculum 2013.

Curriculum 2013 is prepared to produce the next generation ready to the future, namely the generation of people who are not only smart intellectually but also morally. Therefore, the curriculum 2013 oriented towards achievement of the three competencies of graduates, the attitude, knowledge and skills are balanced. This is consistent with the purpose of education in Indonesia as stipulated in the National Education System Law No. 20 of 2003.

In the Law on National Education System, Article 1 paragraph 1 stated that education is a conscious and deliberate effort

to create an atmosphere of learning and the learning process so that learners are actively developing the potential for him to have the spiritual power of religion, self-control, personality, intelligence, character, as well as the skills needed him, society, nation and state. This is the curriculum and the need to continue to be refined.

Especially for SD, the implementation of Curriculum 2013 are presented in thematic learning model - integrative. In the process of learning thematic - integrative, teachers play an important role is as a facilitator. Teachers provide facilities to students during the learning process takes place. Aside from being a facilitator, the teacher must be a professional. As professional staff of teachers must be good at making learning scenarios, the selection of teaching methods, learning approaches and clever use of the media to vary the learning. Judging from the characteristics of elementary school students, one of them is happy with the things that are concrete and fun. Then the elementary school teachers are required to be more

proficient in managing learning appropriate to the characteristics of elementary students .

In the process of teaching and learning in schools , learning approach that is appropriate for achieving competence of graduates that is the attitude , knowledge and skills as a curriculum goal in 2013 is a learning approach that is focused on students . Most teachers are familiar with the types of learning approaches. However , the learning approach was not fully implemented by the teacher in the classroom .

Based on the observation of some fourth grade elementary school teacher in the district of Pare Pare , the learning process in elementary school some teachers still use some simple teaching approaches in learning. In general, school learning process using conventional learning models namely lectures, discussion , assignments and learning is dominated by teachers and very few involve students . Conventional learning resulted in the majority of students work procedurally and lack of understanding of the concept , in addition to the interaction between students and teachers during the learning process can be less effective .

From these observations are also known for the learning activities the teacher explains the material in the classroom , students listen and take notes. During work on the problems presented , students are less creative by developing answers delivered by the teacher . This is evidenced by the results of the students' answers were only answered in accordance with the example set by the teacher . Students are not trying to develop an answer in any other way . As a result, students do not appreciate and understand the concepts in everyday life . Teachers are less able to use a variety of methods , and only teaches the basic ability to work on the problems without developing aspects of logical thinking , critical and creativity . The result is that students do not mapu understand a mathematical concept , weak in manipulating numbers, inability to change and shape as well as solving problems .

The learning approach that has the potential to give the process of meaningful activities for elementary students is RME

approach . With RME approach , learning is expected to provide the freedom of students to solve problems . The most important thing in learning is not just the result , but also the process used by students in solving problems . Approach RME is one approach to learning math foundation of his philosophy is in line with the philosophy konstruktifis mentioning that this knowledge is the construction of a person who is learning There are two important things that are the core of RME that mathematics should be connected with reality and mathematics should be viewed as a human activity , Contextual issues are used as a starting point in learning mathematics to help students develop an understanding of the mathematical concepts learned, strategize and find properties in mathematics.

Within the framework of RME, (Freudenthal, PIII) states that "mathematic as human activities", because the learning of mathematics suggested departed from human activities. Basically realistic approach is not viewed as knowledge "ready-made", but "mathematics is a human activity". Learning is no longer just providing information in mathematics, but changed to human activity to obtain human knowledge.

Hadi (2005: 36) states that the concept of RME in line with the need to improve math education in Indoneia dominated by the question of how to improve students' understanding of mathematics and develop the power of reason. With a thematic approach RME diharapkan-integrative learning process becomes better class, students are more active and creative and can increase motivation and student achievement, while the teacher's role may change from the center of the learning process in the classroom as facilitators or mentors or speakers.

Realistic Mathematic Educations (RME)

RME is a theory of teaching and learning in mathematics education. RME theory was first Introduced and developed in the Netherlands in 1970 by the Freudenthal Institute. This theory Refers to the opinion of Freudenthal who said that mathematics should be associated with reality and

mathematics is a human activity. This means that mathematics should be close to the child and relevant to real life everyday. Mathematics for humans to work to solve problems and make-decisions in their daily lives (Abrantes, 2001, p.126).

Freudenthal believes that students should not be seen as passive receivers of ready-made mathematics (math passive recipients already finished). According to Freudenthal (Hadi 2005, p.p7-8) education should lead students to use a variety of situations and opportunities to rediscover mathematics in their own way. Many questions that can be raised from a variety of situations that felt meaningful so that it becomes a source of learning. Mathematical concepts arise from mathematical process, which starts from the settlement related to the context (context-link solution), students gradually develop mathematical tools and understanding to a more formal level. The models emerging from mathematical activity can encourage student interaction in class, leading to the level of higher mathematical thinking. This work is done through the exploration of a variety of situations and issues "realistic". Realistic in this case meant not refer to reality but on something that can be imagined by the students. The principle of rediscovery can be inspired by the informal solving procedures, whereas the invention process again using mathematical concepts.

Realistic Mathematics Education or RME developed in order to review the development in education, it is still less meaningful for students. In RME learning, real world (real world) is used as a starting point for the development of ideas and mathematical concepts. The real world is everything outside of mathematics, like other subjects besides math, or our daily lives and our environment. Math realistic with regard to mathematics learning is an approach to education. It stresses the importance of learning the real context which is known pupil and construction process of mathematical knowledge by the students themselves. The problem must be a real context prefix in any mathematical learning that allows students to find the back by their

own efforts (Supinah and Agus, 2009, p.6).

Some things to note from the characteristics of RME approach is that realistic mathematics learning (Daitin Tarin, 2006, p.5): (1) Includes "active student learning" since learning of mathematics is done through "learning by doing," (2) Included student-centered learning because they memecakan problems of the world they correspond to their potential, while teachers could act as a facilitator. (3) Includes the guided discovery learning because students are conditioned to discover or rediscover the concepts and principles of mathematics; (4) Including contextual learning as the starting point of learning is contextual, which is drawn from the world of students; (5) Includes constructivism learning because students are directed to find their own knowledge of their problems and discussions.

Schematic model of the learning process which is the process of developing ideas and concepts that start with the real world that is called mathematical conceptual by de Lange (Soetarto Hadi, 2005, p.19) is depicted in Figure 1

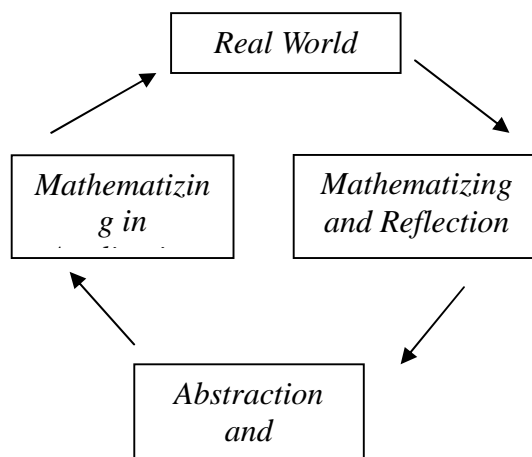


figure 1. Model skematis matematisasi konseptual de Lange

In mathematics realistic development of a mathematical concept such students started exploration activities in the real world (real world). Furthermore, students are given the opportunity to create and develop thinking. To locate and identify a given problem, students perform mathematical and

reflection (mathematizing and reflection) is based on real situations with their respective strategies. Then, at the stage of abstraction and formalization (abstraction and formalization), the students got the regularity and develop concepts. Furthermore, students are trained to solve real problems more complex. After that students can apply mathematical concepts (mathematizing in user application) to the real world so as to obtain concepts.

Motivation to learn

Basically motivation is a conscious effort to move, mengarahkan and maintain a person's behavior that he was compelled to act to do something so as to achieve a particular result or goal.

There are various definitions of the term motivation expressed by the experts of which was put forward by Arul (2001, p.1) says about the meaning of motivation in terms of the original saying is: *The word is derived from the Latin verb movere, roomates Reratas "to move " That the which moves a person to act or behave is what motivates a person. The inner drive, the urge or the desire of the person to do something is caled motivation. If we can identify what motivates a person to behave, psychologists say, we can understand the person.*

Motivation is the process of promoting and sustaining purpose by directing behavior Schunk, et al (2012, p.475). This is a definition of cognitive as postulated that students make the purpose and use of cognitive processes (eg, plan, monitor) and behavior (eg, tenacity, effort) to achieve their goals. Motivation linked to learning ability. Motivation brings a reciprocal relationship between the process of learning and study skills. That is, the motivation affects the learning process and the learning process also affects the motivation of students. The learning process depends on the ability of teachers to provide motivation to the students, in this case the teacher can provide motivation to learn the variations of teaching.

Arends (2008, p.138) suggests that psychologists distinguish two main types of

motivation, namely; intrinsic motivation and extrinsic motivation. Intrinsic and extrinsic motivation as important class gurulah task to take advantage of both the motivation in learning. Santrock (2013, p.514) revealed that intrinsic motivation is internal motivation to do something for the thing itself (an end in itself) while extrinsic motivation is doing something to get something else (how to achieve the goal). The tendency of intrinsic and extrinsic motivation are two possible independent, and at a certain time a person can be motivated by a portion of each of the trend. Gurulah task to be able to ensure the extrinsic motivation of students also support the learning undertaken. For that teachers need to know about the factors influencing motivation.

From the various definitions of the above, it can be seen that the motivation happens when someone has a desire to perform an activity or action in order to achieve objectives. Keinginan to perform an activity or action is influenced by the stimulation. Stimuli to perform an action or activity in the form of interest. In learning activities, motivation can be considered as the driving force in the overall self-esteem that causes learning activities, which ensures continuity of learning activities and provide direction on the learning activities in order to achieve a goal. Motivation to learn plays an important role in delivering the passion or enthusiasm in learning, so that students who have a strong motivated a lot of energy for learning activities.

From the opinions of the above, it can be concluded that the motivation to learn is a boost in a person who appears by the presence of stimuli both from within oneself (intrinsic) or from outside that person (extrinsic) so that one wishes to engage in learning activities to achieve the ultimate goal set by learners in the lesson.

Learning achievement

From the definition of learning achievement, according to some experts that the achievement is something that is necessary to know the changes that occur

during learning activities, achievements obtained by the students are intimately associated with learning activities conducted.

According to Chance (2003, P.17) defines learning as "... learning is defined as change in behavior due to experience". Learning is defined as a change in behavior in relation to the experience. Changes arising from realized and practices, experience, and training is not an accident. While Shcunk, (2008, p.2) states that "learning is an enduring change in behavior, or in the capacity to behave in a given fashion, roomates results from practice or other forms of experience". Learning is a change caused by behavior or skills addressed by the reaction at customs, where the results come from exercise or formed from experience.

Nana Sudjana (2010, P.23) achievement is the result given by the teacher to the students related to the ability of the students in mastering the content of the lesson material. So the level of student achievement can be seen from many least subject matter that has occupied since the process of learning that can be seen from the results of learning.

Keywords of the notion that learning is a change in behavior. Changes here mean that a person who has undergone a process of learning will experience changes in behavior, both in terms of knowledge, skills, and in his attitude. Behavioral changes in the aspect of knowledge is not understood be understood, from the silly to be clever; in the aspect of skill is not to be able, from unskilled become skillful; in this aspect is the attitude of hesitation became convinced of disrespectful be courteous, from brash to be learned.

From the definition of learning achievement can be concluded that the notion of learning achievement has grown by three relationships, namely (a) the achievements related to behavior, (b) relating to the achievement of results, and (c) the achievements related to the attitude and time. Achievement-related behaviors including the ability to communicate, work together doing various motor activity and resolve complex problems. Achievement related to the results of which write the theme or project reports,

an art and produce artworks. Achievement related to attitudes and the time between them pride in their work, the desire to improve the competence continuously, committed to quality, and self-esteem. Learning achievements are mentioned in the description related information compiled by the students so that students understand the information that has been obtained and can explain the re-update the information obtained.

Thematic-Integrative Learning

The curriculum integrates a topic of discussion since the turn of the 20th century the National Council of Teachers of English (NCTE) defines integration represents the union of all subjects and experience (Susan & Rebecca, 2004, P8). The unification of this integration point to a combination of the two subjects, usually performed by the same instructor. Susan and Rebecca define three approaches to integration that is multidisciplinary, interdisciplinary and transdisciplinary.

That is, in the curriculum planned integrative learning experience not only provides students with the same pandanagan of common knowledge, but also to motivate and develop the ability of learners to see new relationships and to create models, new structures and systems.

According Liu and Wang (2010) states that: Based on the definition of curriculum integration, the content of learning should be well-organized so as to Achieve better learning effects. That is based on the definition of curriculum integration, learning content should be well-organized so as to achieve better learning effect. Thus the learning process using the curriculum integration should have to organize each subject with the content of the material studied in accordance with the ultimate goal of learning.

Thematic learning by Hajar (2013, p.21) is defined as an integrated learning concept that uses the theme to associate some subjects that can memberian meaningful experiences for learners. Told meaningful because students are able to understand the

concepts learned through direct experience and connect with other concepts are understood.

In line with the above statement, Randle (2010, p.85) adding about emphasis and thematic-integrative learning benefits, namely; Integrated Thematic Instruction-based curricula stress the integration of all disciplines to present students with learning experiences that are based in real-world application and structured to encourage higher-order learning and the development of critical habits students need to Become lifelong learners.

The above statement means that the instruction thematic-based integrative curriculum emphasis on integrating all disciplines with a learning experience based on real-world applications and structures that encourage learning becomes better and develop the habits and needs of the students to become lifelong learners.

Based on various opinions above, it can be concluded that an integrative thematic learning-learning approach that integrates various competencies of various subjects into various themes. The integration is done in three ways, namely the integration of attitudes, skills and knowledge in the learning process and the integration of various basic concepts related. The theme directs and gives full meaning to the learners.

Types of research

This study uses a quantitative approach with the method of quasi-experimental design pretest-posttest nonequivalent groups. In this study involving two classes: one class experimental and one control group. Each got different treatment in the learning process, but using the same material. Given the experimental class while learning to use RME control class given the usual or conventional learning.

Procedure

The stages are carried out in this study were: 1) conduct pre-study; 2) manufacture of instruments, instrument validation and test instrument; 3) coordinate with the teacher; 4) pre-test; 5) provision of the experimental

treatment in the experimental group by applying RME approach to learning; 6) provide post-test on each of the study groups; 7) data processing and data analysis; 8) manufacture of research reports.

RESULTS AND DISCUSSION

Effect of RME Approach to Student Motivation through Thematic-Integrative Learning Based on testing for the formulation of the problem first, found that there are significant RME approach to student motivation. This is because in this approach, the difference students' motivation note. Students are given treatment or treatment in accordance with their respective motivations. This does not occur in the control class. Learning tematik-integrative approach to the usual (conventional) executed in classical assuming equal abilities of each student or by taking the average student motivation as a benchmark for implementing learning.

Thematic learning-integrative approach RME done so that students can discover and construct konsp-mathematical concepts. RME approach using real-world problems (real world) as a starting base of learning it is necessary to arrange the problem situation actually contextual or in accordance with the experience of students, so that students can solve problems by informal means through horizontal mathematization. Informal ways as an inspiration for the formation of concepts or mathematical aspect is enhanced through mathematical vertically. Through the process of horizontal-vertical mathematical students are expected to understand or discover mathematical concepts. Learning on the theme 7 last five meetings, three of which were carried out with a small group discussions homogeneous (all members have the same level of motivation) and the rest is held by small groups of heterogeneous (members of the group come from different levels of ability). This makes students do not feel isolated because it is always grouped in a group with members who have the same level of motivation. In a homogeneous group of students can get together to discuss and

resolve the same problem in a heterogeneous group of students who have a high ability to help students who are capable underneath, similarly with the student capable of being.

The provision of treatment tailored to student motivation This causes the students can follow the learning and achieve learning goals based on their motivation. Students with high motivation to continue to develop his ability and low motivated students who can follow the lesson well and not always behind their classmates, so that students can learn optimally in accordance with their respective motivations and raised confidence in the abilities themselves in mathematics. In line with the opinion of Arul (2001, p.81), that all individuals have the conviction that he has the motivation to overcome the academic tasks at hand, he would not have experienced anxiety, and on the contrary he will be able to enjoy it. Thus, the students' learning motivation can continue to be reduced can be optimized and can be interpreted that there are differences in motivation to learn in the second grade. It shows the influence that signifikan between RME approach through the use of thematic learning-integrative student motivation.

Effect of RME Approach to Student Achievement through Thematic-Integrative Learning

By grouping students by ability and give different treatment to make the students learn and understand the material optimally according to their respective capabilities. Students with a capacity above the average ability of classmates can further develop their competencies through treatment in accordance with their capabilities, while students with abilities below average ability classmates are no longer faced with something far above the limit of their capabilities. Thus, each student can optimize the learning achievement according to the ability of each.

Student achievement through thematic learning-integrative approach to the usual (conventional) lower than student achievement through thematic learning-an approach is integrative with RME can be seen from the average post-test the students

that can not reach KKM (Minimum Criteria for completeness). In the conventional learning models, learning classical implemented by providing services on the basis of size in general or average. So overall the students in the class are considered to have the same capabilities so that teachers often pay less attention to students who are capable of above average or students with abilities below average classmates. Therefore, students with high abilities are less able to develop the ability and low ability students with increasingly lagging far by classmates.

Improved learning achievement demonstrated by the experimental group and the control group did not escape from the involvement of several factors, both internal factors and external factors of a learning process. One of these factors is the ability of teachers to deliver lessons effectively and efficiently. For that a teacher should be familiar with a variety of learning strategies for the learning process more interesting so that students are more motivated to study harder.

This study shows that the thematic learning RME-integrative approach results in improved learning motivation and achievement of higher learning on the theme 7 when compared with learning to use conventional teaching methods. Thus the use of RME approach can improve student achievement through tematik-integrative learning, because students play an active role in the success of learning, he did not position itself as an object, but also as a subject in itself.

CONCLUSION AND SUGGESTION

Based on the results of research and data analysis has been done, can be summarized as follows: (1) There is the influence of RME approach to motivation and student achievement through learning-integrative thematic;. (2) Learning thematic RME-integrative approach turned out to provide a better effect on motivation and student achievement, in the sense that the motivation and student achievement using

the approach RME larger than the usual approach (conventional).

Suggestion

Based on the research results to teachers or faculty at the school, given suggestions as follows: Learning RME has a better effect on motivation and student achievement, so that teachers or educators should choose a good learning method.

The teachers strived to increase motivation and student achievement would be more appropriate and effective to use learning methods to apply directly.

The teachers sought to maximize the observation of the learning process will be more effective by adding auxiliary staff for each class, in order to assist teachers in making judgments.

REFERENCES

- Abrantes, P. 2001. Mathematical competence for all: Options, implications and obstacles. *Educational Studies in Mathematics*, 47: 125-143.
- Arends, R.I. 2007. *Learning to teach*. Avenue of the Americas, New York: McGraw-Hill Companies
- Arul, M.J. 2001. *Motivational*. Diambil pada tanggal 11 Januari 2014 dari: <http://arulmj.net/motivn.html>
- Chance, P. 2003. *Learning and behavior*. Belmont: Thomson Learning.
- Daitin Tarigan. (2006). *Pembelajaran matematika realistik*. Jakarta: Dirjen Dikti
- Drake, M. 2012. *Creating standards-based integrated curriculum*. California: A Sage Company
- Depdiknas. 2003. *Undang-undang RI nomor 20 tahun 2003 tentang sistem pendidikan nasional*
- Depdiknas. 2007. *Undang-undang RI nomor 20 tahun 2007 tentang standar*
- penilaian pendidikan dasar dan menengah*
- Freudenthal. *Realistic mathematics education*. Utrecht : Freudenthal Institut
- Lake, K. 1994. *Integrated curriculum. School improvement research series*. Close-Up#16
- Liu, M.C., & Wang, J.-Y. 2010. Investigating knowledge integration in web-based thematic learning using concept mapping assessment. *Educational Technology & Society*, 13 (2), 25–39.
- Randle, I. 2010. *The measure of success: Integrated thematic instruction*. Diambil pada tanggal 2 April 2013, dari <http://www.tandfonline.com/doi/pdf/10.1080/00098659709599331>
- Santrock, J.W. 2013. *Psikologi pendidikan*. Jakarta: Kencana Prenada Media Group
- Sardiman. 2011. *Interaksi dan motivasi belajar mengajar*. Jakarta: Rajawali pers.
- Schunk, D.H. 2008. *Learning theories*. The University of North Carolina at Greensboro: Pearson.
- Schunk, D.H. 2012. *Learning theories* (terjemahan Eva Hamdiah dan Rahmat Fajar). Jakarta : Pustaka Pelajar
- Hadi, S. 2005. *Pendekatan matematika realistik dan implementasinya*. Cetakan pertama, Tulip: Banjarmasin
- Sudjana, N. 2010. *Penilaian hasil proses belajar mengajar*. Bandung: Remaja Rosdakarya
- Supinah dan Agus D.W., 2009. *Strategi Pembelajaran Matematika Sekolah Dasar*, Jakarta: PPPPTK Matematika

Departemen Pendidikan Nasional.

Susan & Rebecca. 2004. *Integrated curriculum*. America: ASCD

Treffers, A. 1991. *Didactical background of mathematics program for primary education in primary school*, Utrecht: Freudenthal Institut