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Development of Meme Learning Media with PMRI to Implement Mathematics Literacy in Students Elementary School

Diki Hasrul Wathani[1], Riana Irawati[2], Prana Dwija Iswara[3]

[1, 2, 3]Elementary Teacher Education, Faculty of Science Education, Universitas Pendidikan Indonesia, Jl. Dr. Setiabudhi, No 229, Bandung, Indonesia
Email: dikihasrul@upi.edu

Abstract

Low mathematical literacy is one of the causes of the lack of interest and motivation in learners. Mathematical literacy and realistic mathematical approaches have relevant characteristics. This research aims to develop memes as learning media with a realistic mathematical approach to develop mathematical literacy in elementary school students. The research consists of several steps, which are: analysis, design, development, implementation, and evaluation. The methods used are descriptive, evaluative, and experimental with a pre-experimental design. The instruments used were expert validation questionnaires, student response questionnaires, teacher observation sheets, and evaluation assessments. The results obtained from material experts were 79% and 78% from media expert, both in the appropriate category. Assessments of mathematical content obtained the validation results from the material experts and media experts with scores of 79% and 78%; both belong to the decent category. In large-scale trials, the results of the student response questionnaire after learning obtained a score of 73% while the evaluation results obtained a score of 60%. The students' evaluation scores are evenly distributed from the lower limit of 25 to the upper limit of 95. Based on the results, it can be concluded that meme teaching media with a realistic mathematical approach develop students' mathematical literacy even though it is not a high level.

Keywords: Meme, Learning Media, PMRI, Mathematic Literacy

Abstrak

Literasi matematika yang rendah menjadi penyebab dari kurangnya minat dan motivasi pada peserta didik. Literasi matematika dan pendekatan matematika realistik memiliki karakteristik yang relevan. Penelitian ini bertujuan untuk mengembangkan meme sebagai media pembelajaran dengan pendekatan matematika realistik untuk menanamkan literasi matematika pada siswa di sekolah dasar. Penelitian ini terdiri dari beberapa langkah, yaitu: analisis, design, development, implementation, dan evaluation. Dengan metode yang digunakan yaitu deskriptif, evaluatif dan eksperimental dengan jenis pre-eksperimental desain. Instrumen yang digunakan terdiri dari kuesioner validasi ahli, angket respons siswa, lembar observasi guru, dan penilaian evaluasi. Penilaian terkait konten matematika diperoleh hasil validasi ahli materi dan ahli media dengan nilai masing-masing 79% dan 78%, keduanya termasuk dalam kategori layak. Dalam uji coba skala besar, hasil angket respons siswa setelah pembelajaran memperoleh nilai 73% begitu pun hasil evaluasi dengan nilai 60%. Perolehan nilai evaluasi siswa tersebar merata dari batas bawah 25 hingga batas atas 95. Hasil penelitian dapat disimpulkan bahwa media ajar meme dengan pendekatan matematika realistik mampu menanamkan literasi matematika meski tidak secara keseluruhan dalam level yang tinggi.

Kata kunci: Meme, Media Pembelajaran, PMRI, Literasi Matematika

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INTRODUCTION

Learning is an activity to teach students (Margana et al., 2017). In mathematics learning, we often find students who are bored. Boredom in learning is the implication of the lack of interest and motivation

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of students. Good attention is required to increase students' interest in learning (Silfitrah & Mailili, 2020). Students with high motivation always strive to achieve their goals to study harder in every subject (Ulya et al., 2016). Students will realize the need for learning and can use their knowledge consciously if they already have motivation in learning (Nuraisah et al., 2016). The lack of students' interest should encourage teachers to create creative and fun learning innovations (Abrar, 2018).

One form of teachers' creativity in teaching is the use of media in learning process. Media is commonly used to attract students' interest in process (Iswara et al., 2020). Innovative learning media can improve students' achievement (Nugroho & Purwati, 2015). Teachers must use their abilities to increase resources. Setiawan (2020) reveals that "The ability to symbolize, support, and represent mathematical ideas is a manifestation of creative learning." The abilities that teachers must have in facilitating learning are the ability to symbolize mathematical concepts in an easy-to-understand context, the ability to support a learning atmosphere to motivate students, and the ability to apply mathematical ideas into contexts that are easily understood by students. Memes can be used as an alternative contextual learning media.

Memes in the information age have become contents that can easily be found on social media. Due to the abundance, memes have become popular culture. The increasing use of the internet and social media makes it easy to spread memes and established them as a popular culture that continues to spread beyond the limit (Benoit, 2018). As mentioned by Allifiansyah (2017), "Memes in practice are not only present as a parody of social activities but can also be used for other social things." Memes are entertaining, but not infrequently found to raise political or social issues; sometimes memes also have educational value (Khasanah & Mansoor, 2020).

Memes as learning media combined with a realistic mathematical approach have the following characteristics: alternative thinking, inventive, contextual, cooperative and democratic, communicative, and argumentative. PMRI has contextual characteristics, is interesting, and takes teaching materials from phenomena that are close to students (Sembiring et al., 2008). The Realistic Mathematics approach begins with providing contextual problems for students (Matondang, 2020).

Mathematics has been defined variously based on diverse perspectives. Mathematics as a language or mathematics as a way of thinking. Understanding mathematics in multiple ways is one of the goals of mathematical literacy (Indah et al., 2016). Mathematical literacy can be described as an individual's ability to use, interpret mathematics in various contexts and be able to use it in everyday life (Wulandari & Azka, 2018). Precise mathematical literacy should be introduced and developed since elementary school (Simarmata et al., 2020).

The product of this research is Mememathika, memes that contain the value of learning mathematics. Mememathika as a learning medium can also be used to increase students' motivation to learn. Mememathika is a meme that blends with PMRI. Each PMRI syntax becomes the basis of the application of Mememathika. Each learning medium is also influenced by the tendency of the students' type of learning. Mememathika learning media cannot be avoided from the subjective nature of students.

Memes are also a product of popular culture, which is constantly evolving. Therefore, Mememathika is an update in following the times and it must always evolve.

The research was conducted by developing memes as a learning medium combined with a realistic mathematical approach for elementary school students. From the description, the problems in the form of statements of the research are: 1) how can Meme as a medium of learning with a realistic mathematics approach that meet the needs of students and teachers at primary schools be developed? 2) How are the test results obtained using instructional media meme eligible to embed mathematical literacy in students at elementary schools? The objectives of this study are: 1) to find out the guidelines and concepts in developing memes that refer to a realistic mathematical approach in elementary schools, 2) To find out the results of the learning media test with a realistic mathematical approach in instilling mathematical literacy in elementary schools.

METHODS

The research uses a Research and Development (R&D) approach. The development design in this study uses the ADDIE model design. The ADDIE model development process is divided into five stages: analysis, design, development, implementation and evaluation (Serevina et al., 2019). A study of development often uses descriptive, evaluative, and experimental. The type of experiment used in this study is a type of pre-experimental design.

The development of memes as learning media has a test subject, namely: 5th-grade students of SD Negeri Cibubuan 2 Sumedang. The media validator consists of one media expert, in this case, the learning media lecturer. The expert validator consists of one lecturer who is a mathematician. In this study, there were five kinds of data collection techniques, namely: validator questionnaires, student's questionnaires, interview, observation sheets, and tests.

Using the student's response sheet from the math literacy exam to process the test results. Data about product feasibility were obtained from material validators and media validators through questionnaires. In addition, there are student response questionnaires and teacher observations to assess the feasibility of users. The data from the questionnaire will be processed in a quantitative descriptive manner so that it is well-structured and easy to read.

Data analysis was performed using the formula below:

$$\text{Percentage value of each instrument} = \frac{\sum Riil\ Value}{\sum Full\ Value}$$

The interpretation of the analysis results for each instrument is as follows:

Table 1. Learning media feasibility scale

Level of Achievement	Qualification
$82\% \leq x \leq 100\%$	Very good
$63\% \leq x \leq 81\%$	Worthy
$44\% \leq x \leq 62\%$	Less worthy
$25\% \leq x \leq 43\%$	Very less

RESULTS AND DISCUSSION

Analysis

In the needs analysis stage, a preliminary study was carried out to obtain a map of needs in developing memes as learning media as a result of online interviews with teachers. The teaching aid in the form of oranges is used by the teacher to illustrate how the concept of fractions is concrete. Orange media is one way to demonstrate a concept of fractions from the abstract into something concrete. However, fractional operations are not just an introduction to concepts. Fraction counting operations in which there is a mathematical process.

One of the topics in the 5th-grade mathematics curriculum is fractional arithmetic operations. Based on the analysis of the topic of arithmetic operations on fractions, sub-topics were obtained, namely Summation and Reducing Fractions. In one sub-topic there are several materials contained in it, namely:

a) Addition common fraction
b) Subtraction of common fractions
c) Addition of a mixture fraction
d) Subtraction of mixed fractions

These four materials are contained in several memes developed by the author which are then called Mememathika. Mememathika is expected to foster students' appreciation of mathematics, connect mathematics with life, and improve students' understanding of mathematical concepts.

Design

The design phase has two stages, namely planning and design. These stages are adapted to the needs analysis and validated by media experts and material experts. The stages of learning media planning-design are the formulation of media (visual) by the rules of assessment of learning media, namely: aspects of graphic feasibility, aspects of language feasibility, and implementation in presentation. The material planning-design stage is the formulation of the material contained in the learning media by the feasibility of the content and the feasibility of the presentation which will be

validated by material experts. The design stages produce Mememathika learning media which is divided into five types of functions and characteristics, specifically types of concepts, formulas, exercises, evaluations, and motivations.

Development

Mememathika processing results were grouped into five types, the examples are as follows:

a) Mixed fractions are transformed into memes in Mememathika concepts (see Figure 1). It is composed of two numbers: natural numbers and fractions. Mememathika's creation is an illustration of a combination of two animals in the form of an animation depicting a combination of two numbers.

Figure 1. Mememathika types of mixed fraction concepts

b) One of the types of formulas below is a solution flow to solve fraction problems (see Figure 2).

Figure 2. Mememathika types of solving subtraction in mixed fractions

c) Practice questions are certainly an integral part of learning mathematics. Mememathika try to make

the exercises seem to be a challenge or a game (see Figure3).

Figure 3. Mememathika type of practice questions on mixed fractional material

d) Mememathika tries to make learning evaluation as comfortable as possible. The evaluation of learning is frequently conducted in a hostile environment. It is thought that flavoring the evaluation with memes, it will be more effective.

e) Motivation is an important thing in learning. Mememathika presents humorous motivation. Example of Mathematizing this type of motivation shown in Figure 4.

Figure 4. Mememathika type of motivation for students on mixed fractional material

Following the above-mentioned grouping of memes, a lesson plan is created using a realistic mathematical method. The learning syntax of RME (Realistic Mathematical Education), which was adopted in Indonesia as a Realistic Mathematics Approach, differs from that of standard mathematics learning methodologies. According to Sembiring et al., (2008) Realistic Mathematics approach has stages consisting of opening, discussion, problem-solving, and closing. The learning syntax of RME (Realistic Mathematical Education), which was adopted in Indonesia as a Realistic Mathematics Approach, differs from that of standard mathematics learning methodologies.

Implementation

The implementation stage begins with product feasibility validation by media experts and material experts. Validation by experts consists of two rounds each. The first round is used as analytical material to revise learning media products. The first round of validation by media experts showed a total percentage of the assessment results of 62%. The first round of validation by material experts showed a total percentage of the assessment of 79%. In the second round of validation, after revision, the learning media experts and mathematics learning material experts received a score of 78% and 79% (with a note that the second round of validation was not carried out for material experts because they were in the good category). Here are the details in the table below:

Table 2. First round expert validation

Validation	Criteria	Score	Percentage	Total Percentage
Media Expert	Graphics Feasibility	15	62%	62%
	Language Feasibility	28	58%	
	Presentation	8	66%	
Material Expert	Content Feasibility	42	75%	79%
	Presentation Feasibility	23	82%	

Table 3. Second round expert validation

Validation	Criteria	Score	Percentage	Total Percentage
Media Expert	Graphics Feasibility	24	62%	62%
	Language Feasibility	36	58%	
	Presentation	10	66%	
Material Expert	Content Feasibility			
	Presentation Feasibility			

The results from expert validation show that it is feasible. Deliver this product to carry out a small-scale test and wide-scale testing. The sample selection used the purposive sampling method. Small-scale test with a sample of 10 students in grade 5 SD and large-scale test with a sample of one class totalling 24 students. Small-scale and large-scale tests are carried out with integrated learning. The instruments used in the trial to test the practicality of mathematics consisted of student response questionnaires, teacher observation sheets, and student knowledge assessments with mathematical literacy-based questions. Student response questionnaires were used to measure student responses to learning using mememathika. The student response questionnaire containing three indicators got positive results. The teacher's observation sheet is used as a learning evaluation tool from the teacher's point of view to assess the learning process. The teacher's observation sheet consists of three aspects with good ratings. Literacy in students was measured using a test with questions based on mathematical literacy. The results of the student's ability test on the small-scale trial got an average score of 56 out of a maximum of 100. The test results on the large-scale trial with 24 students in grade 5 got an average

score of 60 out of one hundred.

In the large-scale test, the test results data are normally distributed. The lower limit value is 25 and the upper limit is 95. Nine students get a score below the average, ten students are above the average and five students are at an average score of 60.

The questions used in the mathematical literacy evaluation test are divided into two categories, namely ordinary questions and literacy-based fractional problems, hereinafter referred to as part 1 and part 2. PISA establishes a basic level of ability, on an ability scale, with a scale of 6 as a high level and 1 as a low level (Astuty, 2018). The distribution of scores on the test questions part two shown in Table 4.

Table 4. Distribution of scores on the test questions part two

Score (total=12)	Total Students
12	1
9	5
6	6
5	5
2	3
1	2
0	2

In the recapitulation of test results from Table 4, there is one student who achieves a score of 12 (perfect) in part 2 (mathematical literacy-based questions) and five students who get a score of 9. The average score on the large-scale test is 60.

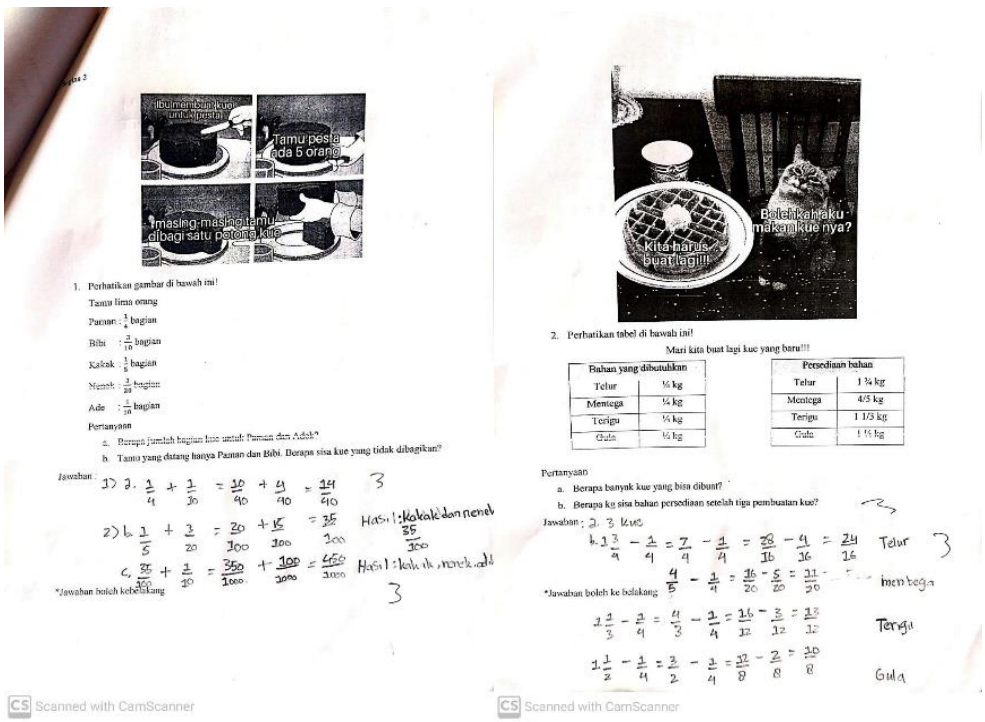

Figure 5. Students answer sheet about fraction problem

The results of the students' answers in Figure 5 have shown the achievement of level 4 mathematical literacy. The second part of the question consists of four questions that contain problem-solving with literacy levels three and four. In literacy questions levels three and four students are required to be able to reach the literacy level which consists of 1) Students can use their knowledge to solve routine problems, and can solve problems with general contexts. 2) Students can interpret the problem and solve it with a formula. 3) Students can carry out procedures well in solving problems and can choose problem-solving strategies. 4) Students can work effectively using the chosen model and can integrate it with different representations, then relate it to the real world.

Questions part two requires level four mathematical literacy. To be able to answer the literacy questions level four, students must first be able to use their knowledge to solve routine problems (math literacy level 1) . In terms of the meaning of the problem related to fractional operations. After students can analyses a fraction problem then the problem can be solved by formulas or fractional modelling (math literacy level 2). In the second part of the problem, many solutions can be used to solve it. Such conditions require students to be able to choose which solution path to use (math literacy level 3). The second part of the problem deals with situations in the real world. In the question "how many cakes can be made?" to answer the question students must integrate real-world concepts up to how many times they are used so that the materials can no longer be used (math literacy level 4).

Evaluation

All of the equipment used in the large-scale testing was utilized to assess the product's practicality. The recapitulation of the instruments used are listed shown in Table 5.

Table 5. Product feasibility data Mememathika as a learning medium

Data Type	Percentage
Students Response	73%
Teacher Observation	83%
Questions test results	60%

From Table 5, the instruments used include student responses with 73%, teacher observation sheets with 83%, and evaluation with 60%. As a result, Mememathika may be classified as a viable medium for studying mathematics to establish mathematical literacy in elementary schools.

Materials experts rate contextual memes very well. Contextual learning in mathematics learning makes students aware, recognize, care and be able to internalize mathematical values in their lives in society contextual learning in mathematics education raises students' awareness, recognition, concern, and ability to internalize mathematical values in their daily life in society (Maryati & Priatna, 2018). Contextual learning patterns are required for elementary school students when learning mathematics. Contextual learning is learning in which it is connected between student experience and the material

being taught (Ramdani, 2018). According to media experts who stated that Mathematics is very good to be used independently by students for learning. During the pandemic, independent learning with technology or not becomes an alternative in the transformation strategy of the education system in Indonesia (Gunanto, 2021).

Memes can be used over and over again. There is no need for sophisticated equipment to open an image, and it may be used at any time. To boost student interest and motivation, learning can be applied to the following material. Because, to create creative, innovative, effective, and enjoyable learning the teacher must be creative in combining models and learning media (Firdayati, 2020). The key to effective teaching is the teacher's use of enjoyable learning methods (Dewi, 2021).

Continuous learning is needed so that mathematical literacy can develop in students, especially in elementary schools. One person who caught my attention was able to complete the evaluation questions with a score of 95%. If the planting of mathematical literacy is compared to planting trees. Only six of the 24 seeds sown in 24 different media have sprouted and matured. Six students had grades of 70% or more, while the others had grades of 60% or lower. The results of the one-time learning above can be said to be less effective. Because, mathematical literacy cannot be instilled in one lesson. A continuous effort is needed to be able to instill mathematical literacy in students.

The novelty of this research and previous research is linking learning media with a realistic mathematical approach. Mathematics learning media is based on PMRI starting from analysis, design, development, implementation and evaluation.

CONCLUSION

The results of tests based on mathematical literacy given to students show that there is mathematical literacy at various levels (levels). The various levels of mathematical literacy in students, it shows the diversity of learning responses. Different learning responses are an indication of memes that have a strong subjective nature.

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REFERENCES

Abrar, A. I. P. (2018). Learn Dienes [in Bahasa]. *Al-Khwarizmi: Jurnal Pendidikan Matematika dan Ilmu Pengetahuan Alam*, *1*(1). https://doi.org/10.24256/jpmipa.v1i1.52

Allifiansyah, S. (2017). Youth, Memes and Digital Democracy in Indonesia [in Bahasa]. *Jurnal Ilmu Komunikasi*, *13*(2), 151. https://doi.org/10.24002/jik.v13i2.676

Astuti, P. (2018). Mathematical Literacy Ability and Higher Order Thinking Ability [in Bahasa]. *Proceeding of the PRISMA: Prosiding Seminar Nasional Matematika*, *1*, 263–268.

Benoit, G. (2018). Mathematics in Popular Culture: An Analysis of Mathematical Internet Memes. Retrieved from https://academiccommons.columbia.edu/doi/10.7916/D8BG45GT

Dewi, S. L. (2021). The Influence of Teaching Methods on Learning Interest of Elementary School Students in Mathematics Lessons [in Bahasa]. *Jurnal Pembelajaran Matematika Inovatif*, *4*(4), 755–764.

Firdayati, L. (2020). Increasing Students' Learning Motivation Through Discovery Learning With Geogebra on Transformation Materials [in Bahasa]. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, *9*(3), 833. https://doi.org/10.24127/AJPM.V9I3.2899

Gunanto, S. G. (2021). Game-Based Learning: Constructive Media for Independent Learning for Students [in Bahasa]. *Rekam*, *17*(1), 71–76. https://doi.org/10.24821/REKAM.V17I1.4951

Indah, N., Mania, S., & Nursalam, N. (2016). Improving Students' Mathematical Literacy Skills Through the Application of Problem Based Learning Models in Class VII SMP Negeri 5 Pallangga, Gowa Regency [in Bahasa]. *MaPan*, *4*(2), 200 - 210. https://doi.org/10.24252/mapan.2016v4n2a4

Iswara, P. D., Julia, J., Supriyadi, T., Rahman, A. A., Hartati, T., Rahman, Sopandi, W., & Damaianti, V. S. (2020). Initial reading lesson through “He is handsome” association method and android photo editor media [in Bahasa]. *Universal Journal of Educational Research*, *8*(5), 2090–2099. https://doi.org/10.13189/UJER.2020.080547

Khasanah, A. N., & Mansoor, A. (2020). Chuck norris internet meme viral phenomenon study [in Bahasa]. *DESKOMVIS: Jurnal Ilmiah Desain Komunikasi Visual, Seni Rupa Dan Media*, *1*(1), 89–101. https://doi.org/10.38010/dkv.v1i1.12

Lubis, W. A., Ariswoyo, S., & Syahputra, E. (2020). Ability to solve mathematical problems through a realistic mathematics education approach and an autograph assisted guided discovery approach [in Bahasa]. *Edumatika: Jurnal Riset Pendidikan Matematika*, *3*(1), 1. https://doi.org/10.32939/ejrpm.v3i1.483

Margana, D. P., Iswara, P. D., & Gusrayani, D. (2017). Application of dictogloss and mindmap techniques in improving listening skills for class IV-B SDN Padasuka I students on announcement materials [in Bahasa]. *Jurnal Pena Ilmiah*, *2*(1), 51–60.

Maryati, I., & Priatna, N. (2018). Integration of mathematical character values through contextual learning [in Bahasa]. *Mosharafa: Jurnal Pendidikan Matematika*, *6*(3). https://doi.org/10.31980/mosharafa.v6i3.322

Matondang, A. R. (2020). Development of mandailing culture-based mathematics module with realistic mathematics approach (PMR) to improve mathematical communication ability [in Bahasa]. *AXIOM : Jurnal Pendidikan dan Matematika*, *9*(1), 26. https://doi.org/10.30821/axiom.v9i1.7230

Nugroho, A. A., & Purwati, H. (2015). Development of mobile learning-based mathematics learning media with scientific approach [in Bahasa]. *Euclid, 2*(1). https://doi.org/10.33603/e.v2i1.355

Nuraisah, E., Irawati, R., & Hanifah, N. (2016). Differences in the Effects of Using Conventional Learning and Contextual Approaches on Mathematical Critical Thinking Ability and Student Learning Motivation on Fractions Materi [in Bahasa]. *Jurnal Pena Ilmiah, 1*(1), 291–300.

Ramdani, E. (2018). Contextual learning model based on local wisdom as strengthening character education [in Bahasa]. *JUPIIS: Jurnal Pendidikan Ilmu-Ilmu Sosial, 10*(1), 1. https://doi.org/10.24114/JUPIIS.V10I1.8264

Sembiring, R. K., Hadi, S., & Dolk, M. (2008). Reforming mathematics learning in Indonesian classrooms through RME. *ZDM - International Journal on Mathematics Education, 40*(6), 927–939. https://doi.org/10.1007/s11858-008-0125-9

Serevina, V., Khairunisa, S. G, & Widyastuti, E. (2019). Using the ADDIE model to develop learning material for actuarial mathematics. *Iopscience.Iop.Org*, 12052. https://doi.org/10.1088/1742-6596/1188/1/012052

Setiawan, Y. (2020). Development of elementary school mathematics learning models based on indonesian traditional games and realistic mathematics approaches [in Bahasa]. *Scholaria: Jurnal Pendidikan dan Kebudayaan, 10*(1), 12–21. https://doi.org/10.24246/j.js.2020.v10.i1.p12-21

Silfitrah, S., & Mailili, W. H. (2020). The influence of learning interest and learning motivation on mathematics learning outcomes of class VII students of SMP Negeri 4 Sigi [in Bahasa]. *Guru Tua : Jurnal Pendidikan dan Pembelajaran, 3*(1), 53–60. https://doi.org/10.31970/gurutua.v3i1.39

Simarmata, Y., Wedyawati, N., & Rejeki Hutagaol, A. S. (2020). Analysis of mathematical literacy in solving story problems for grade V elementary school students [in Bahasa]. *J-PiMat : Jurnal Pendidikan Matematika, 2*(1), 100–105. https://doi.org/10.31932/j-pimat.v2i1.654

Ulya, I. F., Irawati, R., & Maulana, M. (2016). Increasing the Ability of Mathematical Connections and Students' Learning Motivation Using a Contextual Approach. Scientific Pen Journal [in Bahasa], 1(1), 121–130. https://doi.org/10.23819/PI.V1I1.2940

Wulandari, E., & Azka, R. (2018). Welcoming PISA 2018: Mathematical literacy development to support 21st century skills [in Bahasa]. *De Fermat : Jurnal Pendidikan Matematika, 1*(1), 31–38. https://doi.org/10.36277/defermat.v1i1.14