Increasing Mathematics Learning Outcomes Through Comic Media Multiliteration

Theresia Vina Anjani[1], Winda Amelia[2]

[12]Primary School Teacher Edcation, Faculty of Business and Humanities, Trilogi University, Jakarta, Indonesia

* Corresponding-Author. Email: theresiavinaanjani@gmail.com

Abstrak

Penelitian ini disusun dengan tujuan untuk meningkatkan pemahaman dan hasil belajar matematika peserta didik menggunakan model pembelajaran multiliterasi dan media yang digunakain yaitu komik pada peserta didik kelas VI A SD Tiranus, Jakarta Timur, Tahun Ajaran 2022/2023. Kemampuan dan hasil belajar yang dimaksud dalam penelitian ini, yaitu kemampuan peserta didik dalam memahami pembelajaran, keaktifan pembelajaran, motivasi, evaluasi dan hasil belajar peserta didik berupa nilai yang mencapai batas KKM. Jenis penelitian ini adalah Penelitian Tindakan Kelas (PTK), di mana guru sebagai pelaksana pembelajaran sedangkan peneliti sebagai pengamat. Desain penelitian ini menggunakan model John Elliot. Penelitian ini dilaksanakan pada semester ganjil tahun ajaran 2022/2023, yaitu pada bulan Agustus sampai November. Subjek penelitian ini adalah peserta didik kelas VI A SD Tiranus yang terdiri dari 21 peserta didik. Objek penelitian adalah hasil belajar mata pelajaran matematika peserta didik. Teknik pengumpulan data menggunakan observasi dan wawancara. Data dianalisis secara deskriptif kualitatif dan disajikan dalam bentuk tabel dan grafik. Hasil penelitian menunjukkan adanya peningkatan hasil belajar peserta didik, yaitu pada siklus I sebesar 71,4% (kategori cukup), kemudian pada siklus II meningkat menjadi 81,7% (kategori baik). Hal ini berarti terjadi peningkatan sebesar 10,3% pada hasil belajar siswa. Dengan demikian penggunaan model pembelajaran multiliterasi media komik dalam mata pelajaran matematika dapat dikatakan meningkatkan hasil belajar peserta didik kelas VI A SD Tiranus.

Kata Kunci: model pembelajaran multiliterasi, media komik

Abstract

This research was prepared with the aim of improving students' understanding and learning outcomes of mathematics using a multiliteration learning model and the media used, namely comics for class VI A students of Tiranus Elementary School, East Jakarta, Academic Year 2022/2023. The learning abilities and outcomes referred to in this study, namely the ability of students to understand learning, learning activity, motivation, evaluation and student learning outcomes in the form of values that reach the KKM limit. This type of research is Classroom Action Research, where the teacher is the implementer of learning while the researcher is the observer. The design of this study used the John Elliot model. This research was carried out in the odd semester of the 2022/2023 school year, namely from August to November. The subjects of this study were students of class VI A of Tiranus Elementary School consisting of 21 learners. The object of study is the learning outcomes of mathematics subjects of learners. Data collection techniques use observation and interviews. The data are analyzed descriptively qualitatively and presented in the form of tables and graphs. The results showed an increase in student learning outcomes, namely in the first cycle by 71.4% (sufficient category), then in cycle II it increased to 81.7% (good category). This means a 10.3% increase in student learning outcomes. Thus the use of the multiliteration learning model of comic media in mathematics subjects can be said to improve the learning outcomes of students of class VI A Tiranus Elementary School.

Keywords: multiliteration learning model, comic media

INTRODUCTION

Technology plays an important role in various aspects of life, one of which is in the world of education. Since the COVID-19 pandemic, learning in schools has been changed to an online learning system. Online learning is virtual or online learning using information and communication technology (Dakhi et al., 2020; Mustakim, 2020). In practice, there is still a lot of online learning that has not been effective. During online learning, there are many obstacles and obstacles that occur such as not being able to understand learning because it is not explained directly, but through media that is less interesting and effective in learning (Dakhi et al., 2022).

Based on the results of interviews, observations and literature studies, students are still found who do not fully understand learning when learning is carried out online, learning is just doing assignments and getting grades without understanding and applying in life. Empirical data obtained from preliminary observations (July 22, 2022) of grade VI students of SD Tiranus showed that, the mathematics scores of online learning on low-circle material, did not reach KKM and students did not understand learning. Of the 21 grade VI students of Tiranus Elementary School, the average math score in all grades is 70.4, which means it is still below the standard minimum completion criteria. The percentage of students' scores on mathematics learning circle material, more than 50% of students obtained scores below KKM (Krieria Minimum Completion). This is due to the students' incomprehension of the material regarding the circle that is considered not related to life, according to the student the explanation from the teacher saturates learning, as well as in learning does not use interesting and motivating media.

The teacher's hope is that students can understand the learning material and can be complete in learning mathematics in accordance with the goals and functions of national education. A student is said to be complete in learning if the student has a minimum score of 75 (Marsini, 2022), understands learning and can apply it in life. The reality is that in the learning outcomes, there are still many students who have not been completed. And when asked to solve problems in the form of stories, students are not capable. This kind of thing must be solved or find a way out. Another problem is also the difficulty of students understanding learning, especially in online learning situations. The media used is less able to help students in achieving understanding and completeness of learning. This reality is a problem that must be resolved immediately.

It is necessary to update the system and techniques in online learning so that students do not focus on grades alone, but focus on what goals and results will be obtained through education. The most important aspects of being the focus of the objectives to be and must be achieved through formal education include cognitive (intelligence), affective (attitude), and psychomotor (skills). For the success of these three aspects in formal education, it really needs a curriculum that is a guideline for the implementation of learning activities to achieve the objectives of education (article 1 paragraph 19 of Law No.20 of 2003). In this case, of course, it can be said that the curriculum must also be in accordance with the needs of children which is an important role in determining the success of formal education. Supporting the application process in the curriculum is learning media. The form of learning media used should be designed to be in accordance with the content and objectives of the curriculum, so that learning achieves maximum results. The learning media designed must meet standardization that contains innovative, creative, easy to use and easy to understand (Putra & Ines, 2021).

Based on the results of interviews with students, there are many complaints that when learning mathematics it is difficult to understand and drain the brain.

The assumption of students when they want to learn mathematics is not very good. In fact, learning mathematics is very important, because at every angle of life it uses aspects of mathematical science. During mathematics learning, it is rare to find a variety of media uses, only in certain materials. In addition, in learning mathematics, it is usually more often used the medium of whiteboards and explanations by teachers. Teaching materials and teaching activities are packaged variously by showing the cultural context of the child. The media used must be able to make children understand and interact according to the type of learning (PAKEM) active, creative, effective and fun (Satriyani, 2017; Zagoto, 2018; Zagoto & Gee, 2022).

Comics are one of the media that can be used in learning that presents interesting images and the stories contained in them make students feel curious. Comics make the information presented easier to understand and the storyline and grammar make it more understandable and remembered. Comics are a multidimensional learning medium, comics can be presented in digital form in the form of reading books, pop-up book forms, and audio-visual forms. This should be used by teachers in the learning process, especially mathematics learning whose connotations are considered boring and difficult to understand. Comic media can also help increase literacy activities, seeing the lack of literacy in students (Retnowati, Ayres & Sweller, 2017).

Based on article 4 paragraph 5, Law of the Republic of Indonesia Number 20 of 2003, education is organized by developing a culture of reading, writing and numeracy for all citizens. This states that in learning there needs to be aspects of reading, writing and numeracy. These three things can be applied in mathematics learning using comic media as a form of multiliteration. Multiliteration (multiliterracies) is a new development or idea of 21st century literacy. Multiliteration does not only use

reading or writing skills, but involves various other aspects. Multiliteration skills are needed to be able to manage information well and then apply it in life. Not only the ability to read, write, and count, but also expanded with digital, electronic capabilities and understanding visual expression. Multiliteration can strengthen attacking characters such as creativity, communication, collaboration, and critical thinking in solving problems (Oktarina, 2020).

Learning activities that are now carried out online make students have challenges to be able to understand learning and the challenges of teachers are as facilitators who package learning with learning media that are in accordance with children's culture, varied, interesting and in demand by students (Asmara, 2015). Students are expected to be able to follow the learning and understand the material. In fact, students have not been able to effectively understand learning in the online learning process. There are still many students who do assignments only as an obligation of school routine, students do not fully understand the learning material. The lack of facilities, media and encouragement given to students so that students are expected to have multiliteration skills in learning. The concept of multiliteration learning helps students in practicing reading, writing, numeracy and technology-based activities. This is in accordance with the development of education which can now be done both in person and face-to-face virtually (Abidin, 2018).

Seeing the condition of elementary school students who still do not understand online learning, it is necessary to increase student understanding. Multiliteration learning with comic media is expected to be a series of innovative and creative learning that is able to overcome students' lack of understanding of online learning and achieve learning outcomes according to educational goals (Dakhi, 2022; Timor t al., 2020; Laoli, Dakhi & Zagoto, 2022; Zagoto, 2022; Zagoto, Yarni & Dakhi,

2019). The focus of this research lies on how solutions improve student understanding. Through multiliteration-based learning with the use of comic media in mathematics learning, it is hoped that students can better understand and achieve complete learning (Zagoto & Dakhi, 2018). Some of the identification areas and research focuses include increasing student understanding of mathematics subjects, habituation of digital literacy and the use of technology in learning, and interesting and effective learning media to support the learning process.

Based on the background and focus of the research above, the problem that researchers can formulate is "How can elusive mathematics learning with the application of multiliteration learning in digital comic media improve learning outcomes?" In connection with this problem, the author has a goal to be achieved in this study, namely, to determine the effectiveness of learning using comic media in mathematics subjects.

METHOD

This type of research is Classroom Action Research, where the teacher is the implementer of learning while the researcher is the observer. Class action research is a study that explains the causality of treatment, as well as explaining what happens when treatment is given and explaining the entire process from the beginning of treatment to the impact of the treatment (Arikunto, Suhardjono & Supardi 2019). This research is a class action research, so this research procedure is in accordance with the class action research procedure carried out in the cycle process. Each cycle consists of planning, action, observation, and reflection. This is in accordance with the opinion of John Elliotthat each action in each cycle is likely to consist of several steps realized in the form of learning activities.

The design of this study used the John Elliot model. The John Elliot model when compared to the Kurt Lewin and Kemmis-McTaggart Models, this John Elliot model appears more detailed and detailed. That being said, because in each cycle it is possible to consist of several actions that are between 3-5 actions (Juanda, 2016). Meanwhile, each action is likely to consist of several steps, which are realized in the form of teaching and learning activities. The intention is to arrange it in detail in this John Elliot Model, so that there is a higher smoothness between the levels in the implementation of the action or teaching and learning process. Furthermore, he also explained that the details of each action or action so that it becomes several steps because a lesson consists of several sub-topics or subject matter. In practice in the field, each subject usually cannot be completed in one step, but will be completed in several ways, which is what caused John Elliot to construct a different schematic Classroom Action Research model (Susanto, Hobri & Nugrahaningsih, 2021)).

This research was carried out in the odd semester of the 2022/2023 school year, namely in September. The subjects of this study were students of class VI A SD Tiranus consisting of 21 students. The object of study is the learning outcomes of learners. Data collection techniques use observation, questionnaires, documentation, pre-test, post-test and interviews. Observation, which is using direct observation of objects and activities in the process of implementing multiliteration learning methods in the field of Mathematics Subjects. Researchers here as teachers and teachers in the field of study as observers. Observation is carried out by using observation of teacher and student activities during the teaching process. A questionnaire is a way of collecting data sources by providing a set of written questions to respondents to answer.

Documentation is a record, photo or picture of events that have passed, as a complement to the observations that have been made. Pre Test (Initial Test), which is an activity carried out by researchers to

determine students' initial abilities in the learning process. Pre test uses Pre Test sheet. Post Test (Final Test), which is an activity carried out by researchers to find out where student learning outcomes are in lessons that have been delivered through the multiliteration method. Post Test using the Post Test sheet. Interviews, which were shown to respondents, namely to schools, mathematics teachers, and students who still had low test scores.

The data are analyzed descriptively qualitatively and presented in the form of tables and graphs. This analysis is carried out to find out whether or not the actions carried out in the study were successful. This is seen from the percentage of success rate achieved by grade VI students of Tiranus Elementary School. Data obtained from the field were then analyzed using interactive model qualitative data techniques from Miles and Huberman. There are three methods in qualitative data analysis, namely: data reduction, data presentation, drawing or verifying conclusions. Data reduction according to B. Miles and Huberman in (Sugiyono, 2019), data reduction is a form of analysis that sharpens, classifies, directs, removes unnecessary and organizes data in such a way that final conclusions can be drawn and verified.

Presentation of data in this case Mathew and Huberman limits a "presentation" as a collection of structured information which gives the possibility of drawing conclusions and data that has been reduced and clarified based on the group of problems studied, allowing for conclusions or verification. Verification or drawing conclusions is a review of the notes review and brainstorming among colleagues to develop intersubjective agreement, or also extensive efforts to place a copy of a finding in another data set.

FINDINGS AND DISCUSSION

Based on the implementation of actions for 2 cycles carried out as many as 4 meetings, data were obtained that student understanding and learning outcomes have improved. Improving understanding and learning outcomes is known by applying a multiliteration learning model using comic media.

Findings

The improvement of student understanding and learning outcomes is known from the results of student evaluations on the pretest, cycle I, cycle II and post test graphs as follows:

Learner Value Comparison

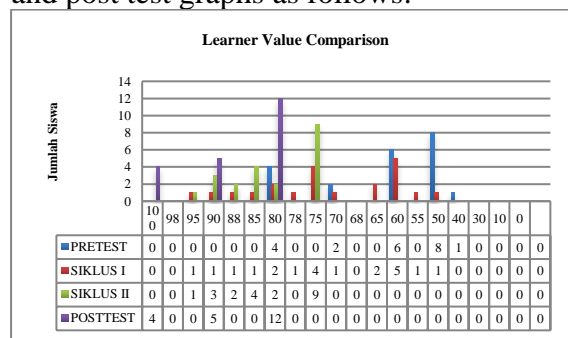|	100	98	95	90	88	85	80	78	75	70	68	65	60	55	50	40	30	10	0
PRETEST	0	0	0	0	0	0	4	0	0	2	0	0	6	0	8	1	0	0	0
SIKLUS I	0	0	1	1	1	1	2	1	4	1	0	2	5	1	1	0	0	0	0
SIKLUS II	0	0	1	3	2	4	2	0	9	0	0	0	0	0	0	0	0	0	0
POSTTEST	4	0	0	5	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0

Figure 1. Learner Value Comparison

In the graph, it can be seen that at the beginning of the pre-test, there were only 4 students who were completed and 17 students who were not completed in the math pre-test with the material being tested was a circle. In percentage terms, it can be said that only 19% of students are complete, the remaining 81% of students are said to be incomplete in learning mathematics in circle material. In the first cycle, there were 11 students (52%) who met the Minimum Completion Criteria and the remaining 10 students (48%) who did not meet the Minimum Completion Criteria and the remaining 10 students (48%) who did not meet Minimum Completion Criteria. Based on these data, it can be concluded that some students have not met the standards of learning completion, so that learning will continue in cycle II. In cycle II, all students have understood the material and completed Minimum Completion Criteria, so the research is stopped in this cycle. Retested through the final test/post test and already 100% students has good learning results.

Table 1. Comparison of Individual Values

No	Name	Score Cycle I	Score Cycle 2
1	Agatha Kisti Tyasayuni	80	90
2	Andrew Joesendy Stevano Manalu	70	75
3	Archita Gloria Paskalis Manihuruk	75	80
4	Bianca Reguna Daben	75	90
5	Brigitha Jocelyn Sitorus	65	85
6	Daniel Ivan Mordhecay Nababan	60	75
7	Dominique Eunike Simamora	85	85
8	Ester Abigail Paulus	60	80
9	Gabriela Shalomita Natasya	75	75
10	Genesius Bajanalamsaka Poetradjaman	60	75
11	Getchia Findit Viadiandra	90	90
12	Ivander Lukas Pardamean Hutagalung	60	75
13	Jaser Mosgal Manurung	65	75
14	Maria Septiani Sitompul	88	88
15	Melkiano Berry Wirawan	55	75
16	Petra Namurasi Panjaitan	50	75
17	Rafael Julianno	60	75
18	Srivania Olivia Aprilia Batubara	80	88
19	Tifany Holy Niceli	78	85
20	Valencia Zefanya Sambuaga	75	85
21	Yuanita Marcellina Romaito Simanjuntak	95	95
	Rata-Rata	71,4	81,7

Table 2. Comparison of Individual Presentation

No	Name	Cycle I	Cycle II	Increase In Success Rate
1	Agatha Kisti Tyasayuni	80%	90%	10%
2	Andrew Joesendy Stevano Manalu	70%	75%	5%
3	Archita Gloria Paskalis Manihuruk	75%	80%	5%
4	Bianca Reguna Daben	75%	90%	15%
5	Brigitha Jocelyn Sitorus	65%	85%	20%
6	Daniel Ivan Mordhecay Nababan	60%	75%	15%
7	Dominique Eunike Simamora	85%	85%	0%
8	Ester Abigail Paulus	60%	80%	20%
9	Gabriela Shalomita Natasya	75%	75%	0%
10	Genesius Bajanalamsaka Poetradjaman	60%	75%	5%
11	Getchia Findit Viadiandra	90%	90%	0%
12	Ivander Lukas Pardamean Hutagalung	60%	75%	15%
13	Jaser Mosgal Manurung	65%	75%	10%
14	Maria Septiani Sitompul	88%	88%	0%

No				
15	Melkiano Berry Wirawan	55%	75%	20%
16	Petra Namurasi Panjaitan	50%	75%	25%
17	Rafael Julianno	60%	75%	15%
18	Srivania Olivia Aprilia Batubara	80%	88%	8%
19	Tifany Holy Niceli	78%	85%	7%
20	Valencia Zefanya Sambuaga	75%	85%	10%
21	Yuanita Marcellina Romaito Simanjuntak	95%	95%	0%
	Rata-Rata	71,4%	81,7%	9,7%

From the table above, you can see the difference in learning outcomes of students in cycles I and II. There has been an increase in student learning, namely 3 people experienced an increase of 5%, 1 person experienced an increase of 7%, 1 person experienced an increase of 8%, 3 people experienced an increase of 10%, 4 people experienced an increase of 15%, 3 people experienced an increase of 20%, 1 person experienced an increase of 25%, 5 people did not experience an increase. The average increase in student learning rate was 9.7%.

Table 3. Percentage of Learning Completion

No	Range of Values	Cycle I		Cycle II	
		Q	%	Q	%
1	< 75	10	48%	0	0%
2	≥ 75	11	52%	21	100%

From the table above in the first cycle, the number of students completed 11 people or 52% and 10 people or 48% were not completed. In cycle II, the number of students completed 21 people or 100% and nothing was incomplete. It can be concluded that there is a successful improvement in student learning outcomes.

Learning outcomes are the results of learning evaluations obtained or achieved by students after participating in the teaching and learning process for a certain period of time. The concrete form and learning outcomes are in the form of a final score from the evaluation included in the report card score (Kemendikbud, 2016). To find out the learning outcomes of students, an evaluation is carried out. Learning outcomes are said to be perfect if they meet three aspects, namely: cognitive, affective and psychomotor, on the contrary, it is said that the results are not satisfactory if a person has not been able to meet the targets in these three criteria. In this learning, all students are complete. The grade point average was 86.1. This is evident from the acquisition of final test scores carried out by teachers after the learning process is complete.

Discussion

Multiliteration is a new paradigm in literacy learning. Literacy learning has implications for the emergence of the concept of multiliteration. The concept of multiliteration arose because humans not only read or write, but they read and wrote with a certain type that involves social, cultural, and political goals that are the demands of the globalization era, so this is the basis for the birth of multiliteration in the world of education. The skills contained in multiliteration learning are reading ability, writing ability, speaking skills, and mastery skills of information and communication media. In curriculum development research by Lauri Palsa & Pekka Mertala(Palsa, 2020) for both disciplines, multiliteration is defined as being developed in various ways. In this study, these ways were divided into three different categories: 1) educational content, 2) teaching equipment and texts, and 3) educational methods and practices. Educational content can be packaged more attractively, innovatively, actively and creatively. Learning material materials can be text-based and assisted with other

equipment (props). Equipped with the use of methods in the learning process will improve the quality of educational practice. These three ways make multiliteration applicable in curriculum development.

The New London Group 2005 (Abidin, 2018) states that pedagogic multiliteration is built by four components or processes of knowledge namely practical situations, clear learning, critical frames and practical transformation. Based on the four pedagogic components of multiliteration, it can be explained that when practical situations are connected with learning concepts, it will become a vehicle for developing critical thinking and analytical skills. Students are guided to deepen multiliteras by expanding the range of texts in learning and learning from all subjects. Learning media is a medium used as teaching material or learning aids. In multiliteration learning, media is not just a tool, but media in multiliteration learning has a broader meaning (Abidin 2018:256). Learning media in multiliteration are all forms of roles used by students both to channel understanding, and skill development. Multiliteration learning media has at least five main functions, namely, generating understanding, guiding processes, enriching understanding, the main means and becoming a learning procedure (Ekawati, 2019).

The recommended assessment techniques are project assessment, portfolio, observation, self-assessment (reflection), and interviews. These assessment techniques are oriented to: (1). thinking ability, which includes: critical thinking, problem-solving, creative, and metacognition; (2). assess actions, including: communication, digital literacy collaboration, visual literacy, technological literacy; and (3). assess the ability to live together in the real world, including: citizenship skills, global understanding, leadership, responsibility, and employability skills. (Midun Hendrikus, 2017)

Through challenging multiliteration learning, it is hoped that students will be able to have self-confidence, intelligence, communicativeness, courage and character (Rahman, 2019), Multiliteration learning makes students to continue to be able to explore learning through reading, writing, numeracy activities either directly or digitally. Learning with multiliteration mdel is said to be able to increase students' understanding of mathematics learning. The skills contained in multiliteration learning are reading ability, writing ability, speaking skills, and mastery skills of information and communication media. These skills are possessed by students, so that students are able to understand and obtain maximum learning outcomes. Students whose initial condition is still lacking in reading, writing, speaking skills and mastery of information and communication media can ultimately improve these skills which also have an effect on improving learning outcomes in mathematics subjects with circle material.

CONCLUSION

After carrying out research and data analysis, the results showed that the multiliteration learning model of comic media can improve mathematics learning outcomes of grade VI students of Tiranus Elementary School. The increase can be seen from the average score of students on the precyclical test, which is 60, the score of students who reach minimum completion criteria is only 4 students or as much as 19%, an increase in the first cycle test with an average student score of 71.4 and students who reach minimum completion criteria, which is only 11 students or as many as 52%. The application of the comic media multiliteracy learning model in cycle I had several shortcomings, so it was necessary to make improvements to cycle II. The improvements made are in the form of dividing groups fairly, giving reinforcement to students so they are brave in expressing opinions and answering questions, encouraging students to be careful in reading activities (literacy) and

paying close attention to whoever is expressing opinions, motivating students to be active by giving praise or appreciation to students, provide opportunities for students to freely express their opinions. Teachers are more intensive in guiding students. Researchers and teachers held discussions about learning steps that had not been implemented. After the repairs were carried out, there was an increase in cycle II, the average score of students in the second cycle test was 81.7, all students who reached the minimum completion criteria were 21 students or as much as 100%, and increased in the final test results with an average student score of 86,1. This means that during the process of giving action for two cycles, students have experienced an increase of 10.3% or an increase of 10.3 points. A more important increase is the change that occurs in the learning atmosphere of students in class, especially regarding attitudes, learning motivation, and student interaction in class. During the action process, the initially less passionate, passive learning atmosphere, students lacking courage in asking questions increases to become more excited, students are enthusiastic and more active, students reduce undisciplined actions such as chatting in class, students appear more motivated in following the lesson, and in group activities they can more actively participate and contribute to problem solving in their group.

After completing the research and obtaining the research results, the researcher would like to give specific advice to teachers, schools and further research. Teachers should pay more attention to learning mathematics in class by using learning models that are effective and fun for students so that boredom in learning will be overcome. Teachers who have the same problem as Grade IV students at SD Tiranus can adopt the Multiliteracy learning model to improve student learning outcomes in learning mathematics in class. Schools should encourage and support teachers to use various learning models and learning media to create more innovative and effective learning activities. For future researchers to conduct research by exploring various models and learning media in order to improve learning outcomes, improve the learning atmosphere, and create a more enjoyable learning atmosphere. Future researchers should be able to conduct research related to learning models with a broader research scope.

REFERENCES

Abidin, Y. (2018). *Pembelajaran Multiliterasi Sebuah Jawaban atas Tantangan Pendidikan Abad-21 dalam konteks Keindonesiaan.* Banduung: PT Refika Aditama.

Arikunto, S, Suhardjono, S., & Supardi, S. (2019). *Penelitian Tindakan Kelas.* Jakartta: Bumi Aksara

Asmara, H. (2015). *Profesi Kependidikan.* Bandung: Alfabeta.

Dakhi, O. (2022). Implementasi Model Pembelajaran Cooperative Problem Solving Untuk Meningkatkan Kreativitas Dan Prestasi Belajar. *Educativo: Jurnal Pendidikan, 1*(1), 8–15. https://doi.org/10.56248/educativo.v1i1.2

Dakhi, O., Jama, J., Irfan, D., Ambiyar, Ishak. (2020). Blended Learning: A 21st Century Learning Model At College. *International Journal Of Multi Science, 1*(8), 50-65.

Dakhi, O., Irfan, D., Jama, J., Ambiyar, A., Simatupang, W., Sukardi, S., & Zagoto, M. M. (2022). Blended Learning And Its Implications For Learning Outcomes Computer And Basic Networks For Vocational High School Students In The Era Of COVID-19 Pandemic. *International Journal of Health Sciences, 6*(S4). https://doi.org/10.53730/ijhs.v6nS4.10976

Ekawati, E. (2019). Penerapan Media Pembelajaran Matematika MI/SD Berbasis Multimedia. *Jurnal Kajian dan Pengembangan Umat*, *2*(1), 36-44. DOI: https://doi.org/10.31869/jkpu.v2i1.1913

Juanda, A. (2016). *Penelitian Tindakan Kelas (Classroom Action Research).* Yogyakarta: Deepublish

Kemendikbud. (2016, 22 Oktober). Peningkatan Hasil Belajar. Pendidikan Dan Pelatihan Teknis Kegiatan Belajar Mengajar Bagi Pamong Belajar. https://repositori.kemdikbud.go.id/17902/1/03.15%20Modul%20Pelatihan%20TFM%20bagi%20Pamong%20Belajar%2005.%20Penilaian%20Hasil%20Belajar.pdf

Laoli, J. Kristian., Dakhi, O., Zagoto, M. M. (2022). Implementasi Model Pembelajaran Jigsaw untuk Meningkatkan Motivasi dan Hasil Belajar Mahasiswa Pendidikan BK pada Perkuliahan Filsafat Pendidikan. *Edukatif: Jurnal Ilmu Pendidikan, 4*(3), 4408-4414.

Marsini, M. (2022). Upaya Peningkatan Hasil Belajar Melalui Model Pembelajaran Problem Based Learning. *ARYA SATYA: Jurnal Pendidikan dan Pembelajaran,* 2(3): 113-130.

Mustakim, M. (2020). Efektifitas Pembelajaran Daring Melalui Media Online Selama Masa Pandemi COVID-19 Pada Mata Pelajaran Matematika. *Jurnal of Islamic Education*. 2(1):1-12. DOI: https://doi.org/10.24252/asma.v2i1.13646

Oktarina, D. (2020, 15 September). Multiliterasi dan Penguatan Pendidikan Karakter. *https://kantorbahasababel.kemdikbud.go.id/2020/05/29/multiliterasi-dan-penguatan-pendidikan-karakter/*

Putra, A., & Ines, F. M. (2021).Systematic Literature Review: Media Komik dalam Pembelajaran Matematika. *MATHEMA: Jurnal Pendidikan Matematika.* 3(1):30-43. DOI: https://doi.org/10.33365/jm.v3i1.951

Rahman, F. A, & Vismaia, S. D. (2019). Model Multiliterasi Kritis Dalam Pembelajaran Siswa Sekolah Dasar. *Jurnal Pendidikan Dasar, 5*(2), 27-34. Doi: https://doi.org/10.21009/JPD.010.03

Retnowati, E., Ayres, P., & Sweller, J. (2017). *Can Collaborative Learning Improve the Effectiveness of Worked Examples in Learning Mathematics?. Journal of Educational Psychology.* ***109***(5), 666-679. doi: https://doi.org/10.1037/edu0000167

Satriyani, F. Y. (2017). *Psikologi Pendidikan.* Jakarta: Universitas Trilogi.

Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung: Alfabeta

Susanto, H. A., Hobri, H., & Nugrahaningsih, T. K. (2021). Developing a Handbook On Multimedia Integration In Mathematics Teaching For Indonesian Primary School Students. *International Journal of Education in Mathematics, Science, and Technology (IJEMST), 9*(2), 236-251. DOI: https://doi.org/10.46328/ijemst.1550

Timor, A. R., Ambiyar, A., Dakhi, O., Verawardina, U., & Zagoto, M. M. (2020). Effectiveness of problem-based Model Learning On Learning Outcomes And Student Learning Motivation In Basic Electronic Subjects. *International Journal Of Multi Science, 1*(10), 1-8.

Undang Undang Republik Indonesia Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional. (2014). Undang Undang Pendidikan Tinggi. Bandung: Fokusindo Mandiri.

Zagoto, Maria M. (2018). Pengembangan Perangkat Pembelajaran Matematika Berbasis Realistic Mathematic Educations Untuk Siswa Kelas V Sekolah Dasar. *Jurnal Education And Development, 3*(1), 53-61.

Zagoto, M. M. (2022). Peningkatan Hasil Belajar Mahasiswa Melalui Implementasi Model Pembelajaran Kooperatif Word Square. *Educativo: Jurnal Pendidikan, 1*(1), 1–7. https://doi.org/10.56248/educativo.v1i1.1

Zagoto, M. M., & Gee, E. (2022). Bimbingan Belajar Matematika Door to Door Pada Masa Pandemi Covid-19. *Zadama: Jurnal Pengabdian Masyarakat, 1*(1), 11–15. https://doi.org/10.56248/zadama.v1i1.14

Zagoto, M. M. & Dakhi, O. (2018). Pengembangan Perangkat Pembelajaran Matematika Peminatan Berbasis Pendekatan Saintifik Untuk Siswa Kelas XI Sekolah Menengah Atas. *Jurnal Review Pendidikan dan Pengajaran, 1*(1), 157-170.

Zagoto, M. M., Yarni, N., & Dakhi, O. (2019). Perbedaan Individu Dari Gaya Belajarnya Serta Implikasinya Dalam Pembelajaran. *Jurnal Review Pendidikan Dan Pengajaran, 2*(2), 259–265. https://doi.org/10.31004/jrpp.v2i2.481