

Development of Mathematics Teaching Material based on Experiential Learning Model to Improve Students' Mathematical Literacy Skills

Andi Desy¹, Nursalam¹, Suharti^{1*}, Lisnasari Andi Mattoliang¹, Baharuddin¹

¹Universitas Islam negeri Alauddin Makassar, Makassar, South Sulawesi, Indonesia

Abstract. This study aims to determine the development of the process of mathematics teaching materials based on the Experiential Learning model to improve mathematical literacy skills in two-variable linear equation system materials as well as the level of validity, practicality, and effectiveness. This type of research is Research and Development regarding the ADDIE development model, which consists of several stages: Analysis, Design, Development, Implementation, and Evaluation. The product developed as teaching materials is a module based on the Experiential Learning model on the material of a two-variable linear equation system. The test subjects in this study were grade VIIIA students of SMPN 45 Makassar, totaling 28 students. The instruments used in this study were expert validation sheets, student response questionnaires, teacher response questionnaires, observation sheets of teacher ability in managing learning, observation sheets of student activities, and learning outcome tests. The results showed that in the limited trial stage, teaching materials based on experiential learning on two-variable linear equation system material had met the criteria of validity, practicality, and effectiveness.

1 Introduction

The era of globalization is marked by advances in science and technology, which will significantly impact the world of education. Success in education is usually measured based on increasing human resources (HR). However, the progress of science and technology actually impacts the fragility of the nation's character.

According to [1], character-building is needed by students so that they can resolve conflicts in their lives. The main tool that serves to shape the nation's character is education, which aims to develop cognitive critical reasoning and the cultivation of moral and ethical values as stated in the National Education Law of the Republic of Indonesia Number 20 of 2003, which must be the main basis in the pattern of implementation and evaluation of the national education system [2].

Well-structured education can create quality human resources, as mathematics education plays an important role in creating a superior generation in the current era of globalization. It was also stated by [3] that one of the subjects that play an important role in the world of

* Corresponding author: suharti.harti@uin-alaududdin.ac.id

education is mathematics because mathematics is one of the basic sciences that can be used to support other sciences such as physics, chemistry, computers, and economics. Learning mathematics can train how to reason in drawing conclusions, develop creative activities that involve imagination, develop problem-solving skills, and develop the ability to convey information or communicate ideas [4].

In fact, in the field, based on the results of the Indonesian mathematical literacy survey, which is still relatively low, it shows that the ability of Indonesian students has yet to compete with students from other countries in the world. PISA results on mathematical literacy in 2018 show Indonesia is ranked 7th from the bottom (73) with an average score of 379. Indonesia is above Saudi Arabia, which has an average score of 373. Then, China still occupies rank one, with an average score of 591 [5]. This shows that the mathematical literacy of junior high school students in Indonesia still needs to improve, and it can be seen that students still need help in applying the mathematical knowledge they have learned to solve context problems related to everyday life, which demands mathematical skills. Some of the components of PISA related to mathematical literacy based on the OECD are as follows: the mathematical processes can describe what students do to connect real-world problems with mathematics so that problems can be solved, the mathematical content is the material used for aspects of evaluation, the context is the context for assessment [6].

The low achievement of students in the PISA study that measures students' mathematical literacy is not only because students in Indonesia do not have all the mathematical abilities described above. Based on the results of the PISA study, the weak ability of students lies in the ability to answer level 5 and 6 questions, which means that students are not able to interpret mathematical abilities in everyday life in various contexts. However, this also happened to SMP Negeri 45 Makassar students with low mathematical literacy skills in answering questions starting at level 3 and level 4, level 5 and level 6. One of the reasons is that the available teaching materials do not facilitate students in improving mathematical literacy [7],[8].

There are several reasons why the development of mathematics teaching materials is essential because the availability of mathematics teaching materials must follow the objectives of mathematics learning in the curriculum, target characteristics, and learning problem-solving demands [9]. [10] also stated that a teacher must be able to make teaching materials to build students' ability to express ideas. According to [11], the teaching materials used in schools are only textbook designs containing definitions, theorems, proofs, sample questions, and practice questions. The use of teaching materials today does not support students' ability to improve mathematical literacy. In addition, research conducted by [12] also states that teaching materials used by teachers are teaching materials as teacher companions in providing exercises to students where the teaching materials do not facilitate teachers in carrying out learning. In addition, teachers who are too busy developing their teaching materials tend to be less effective in learning activities [13].

The teaching material developed in this study is a module because the module is teaching material that is systematically designed based on a certain curriculum and packaged in the form of the smallest learning units and allows learning to be studied independently in certain units of time. According to the Directorate General of Education Quality Assurance and Education Personnel, module is a printed teaching material designed to be learned independently by students. Module is also called media for independent learning because they have been equipped with instructions for self-study [14].

The module is a self-study package that includes a series of learning experiences systematically designed to help students achieve learning goals. The primary purpose of learning with module is to improve the efficiency and effectiveness of learning in schools, both time, funds, facilities, and energy to achieve goals optimally. According to the Directorate General of PMPTK (2008), module are teaching materials that are arranged

systematically using language that can be easily understood by students and can be learned independently without the need for a facilitator, and module can also be used according to student learning speed [14].

The module should be developed based on the needs and conditions analysis results. It is necessary to know exactly what learning materials need to be arranged into a module, how many modules are needed, who will use them, what resources are needed and available to support the use of module, and things considered necessary. Furthermore, a module design follows various objective data and information from analyzing needs and conditions. Based on the design that has been developed, the required module is arranged. The module preparation process consists of three stages [15].

Several abilities expect students to be able to learn mathematics, including understanding concepts, problem-solving, reasoning, and mathematical literacy. Mathematical literacy is an individual's ability to interpret, formulate, and use mathematics in various contexts efficiently, including thinking mathematically and using facts, concepts, procedures, and mathematical tools in predicting and explaining phenomena [16],[17]. According to [18], mathematical literacy is the ability of students to understand and apply several applications of mathematics, such as facts, principles, operations, and problem-solving in everyday life in the past and present. Someone with good mathematical literacy skills is sensitive to which mathematical concepts are relevant to the problem at hand. This sensitivity is then continued with problem-solving using mathematical concepts.

Students' mathematical literacy skills need to be improved by providing teaching materials that directly relate the material to authentic experiences in everyday life so that students are more interested in exploring the mathematical material taught. Therefore, teaching material with an appropriate learning model is needed to spur mathematical literacy skills.

According to [7], the mathematical literacy ability of level 3 and 4 students can be improved by developing mathematics teaching materials. Suitable teaching materials to be developed is module with learning model based on experiential learning because with teaching material in the form of module, students can learn independently and understand the subject matter optimally.

Experiential learning is learning that is done through reflection and also through a process of making meaning from direct experience. According to [19]), *experiential learning* is learning that builds knowledge and creates change from various forms of experience. *Experiential learning* focuses on the learning process for each individual. As stated by [20], experiential learning is more centered on student learning experiences that are open, and students are able to guide themselves so that these experiences can be poured into writing. *Experiential learning* can also be interpreted as a student-centered approach that starts with the premise that people learn best from experience [21]. *Experiential learning* is carried out in the form of cycles that occur repeatedly and involve experience and reflection on these experiences [22].

One of the mathematical materials that demands mathematical literacy skills is the system of linear equations in two variables. A system of linear equations in two variables material is closely related to everyday life and takes the form of contextual storytelling. System of linear equations in two variables is the last material taught to grade VIII students in odd semesters. Solving a system of linear equations in two variables problems requires stages of mathematical literacy, such as the stage of modelling mathematically or representing, then the problem can be solved [23].

Based on the results of observations that have been made at SMPN 45 Makassar class VIII through an interview with one of the mathematics subject teachers on February 20, 2021, information was obtained that the learning process carried out in class is still *teacher-centered* using the lecture method. This is evident because teachers have not carried out a

management of teaching and learning activities that involve students actively, so the learning process is sometimes less effective.

When the teacher shows the teaching materials used in schools, namely test books in the form of student package books, it can be seen that the student package books used in schools in terms of appearance only contain ordinary pictures and the colours are less varied, so that students are less interested in reading, while the contents of the teaching materials only contain definitions, brief explanations and the language used make the students difficult to understand, especially in the material of systems of linear equations in two variables, where when students are given different questions they do not know where to start and how to solve the problem because the student textbook has not led to a learning model that can support students' mathematical literacy skills to increase. In addition, teachers are also required to be able to choose a learning model that can spur students' enthusiasm to be actively involved in their learning experience.

Based on the explanation above, it is necessary to conduct research on the Development of Mathematics Teaching Materials Based on *Experiential Learning Model* to Improve Students' Mathematical Literacy Skills on the Subject of the System of Linear Equations in Two Variables at Class VIII SMP Negeri 45 Makassar.

2 Methods

This type of research is research and development or Research and Development (*R & D*) with the ADDIE development model [24], which consists of 5 stages, namely (*Analysis, Design, Development, Implementation and Evaluation*). The products developed in this study are teaching materials in the form of module based on *experiential learning* models on two-variable linear equation system material to improve the mathematical literacy ability of grade VIII students of SMPN 45 Makassar.

The methods used to collect data in this study were questionnaire and observation methods, as well as mathematical literacy ability tests. The instruments used in this study include validation sheets, student activity observation sheets, observation sheets of teacher ability in managing learning, student response questionnaires, teacher response questionnaires, and learning outcome tests. The data that has been collected using the instruments mentioned above is then analyzed quantitatively and directed to determine the validity, practicality, and effectiveness of the *experiential learning*-based learning model module developed. Validity is seen from the validation results of the module developed and research instruments. Practical indicators can be seen in student and teacher response questionnaires. Effectiveness indicators are the teacher's ability to manage learning, student activities, and learning outcome tests.

3 Results and discussion

This research was conducted by following the ADDIE development model through five phases, namely analysis, design, development, implementation, and evaluation.

3.1 Analysis Phase

The activities carried out at this stage are analyzing the problems contained in the learning process due to the use of existing teaching materials and analyzing the need for the development of teaching materials. Based on the results of the analysis of teaching materials that have been carried out through an interview on Monday, February 21, 2021 with a

mathematics teacher in class VIII_A at SMPN 45 Makassar, information was obtained that the learning process carried out in class is still teacher-centered) by using the lecture method. This is evident because teachers have not carried out a management of teaching and learning activities that involve students actively, so the learning process is sometimes less effective.

In addition, when the teacher shows the teaching materials used in schools, namely textbooks in the form of student package books, it can be seen that the student package books used in schools in terms of appearance only contain ordinary pictures. The colors are less varied so that students are less interested in reading, the content of the teaching materials only contains definitions and brief explanations, and the language used makes it difficult for students to understand the material, especially in the material of two-variable linear equation systems, Where when students are given different questions they do not know where to start and how to solve the problem because the student textbook has not led to a learning model that can support students' mathematical literacy skills.

The results of the student analysis showed that grade VIII students of SMPN 45 Makassar had learned supporting materials at the elementary school level as prerequisite material for learning the subject matter of the system of linear equations in two variables of Junior High School grade VIII. As for the language used by students in everyday life, most of them use Indonesian. When viewed from the level of cognitive development, according to Piaget [25], students have been at the stage of formal operations (aged 11-18 years). This means that students can think abstractly and logically and have the ability to conclude. Students still need objects or actual problems in learning mathematics at that age.

Curriculum analysis shows that the curriculum used in the school is the 2013 Curriculum revised 2006 Curriculum. Syllabus analysis based on the 2013 curriculum with basic competencies and learning objective indicators as follows:

3.1.1 *Basic Competence*

Basic competence of system of linear equations in two variables.

1. Explain the system of two-variable linear equations and solve them related to the problem of constitutional problems.
2. Solve real problems related to systems of linear equations in two variables.

3.1.2 *Learning objective*

After studying the material on systems of linear equations in two variables, students are expected to be able to achieve the following learning objectives:

1. Students can explain the meaning of linear equations in two variables.
2. Students can solve real problems with linear equations in two variables.
3. Students can explain the meaning of a system of linear equations in two variables.
4. Students can create mathematical models of everyday problems related to systems of linear equations in two variables.
5. Students can solve real problems related to systems of linear equations in two variables using graphic, elimination, substitution, and combination methods.

3.2 Design Phase

This stage begins with designing teaching materials, learning implementation plans, and literacy ability tests based on experiential learning models on the system of linear equations in two variables material. Module is developed based on previously learned material on the system of linear equations in two variables material equipped with *experiential*

learning model. The module prepared consists of a title, preface, module content information, instructions for using teaching materials, table of contents, basic competencies, success indicators, concept maps, subject matter, material description, evaluation, summary, reflection, competency test, and bibliography.


Writing a module draft can be done by formulating the basic competencies that must be mastered, determining the assessment form, and compiling the material. Cover design is done by searching for related information, looking at examples of existing covers for teaching materials, and getting help from relatives with expertise in graphic design. The cover is designed to be as attractive as possible with a combination of green color symbolizing nature, which is related to material that is directly related to everyday life, $ax + by = c$ as the general form of system of linear equations in two variables, pictures of children representing students, and pictures of rulers symbolizing tools for the method. The graph corresponds to the material on a system of linear equations in two variables so that students are more interested in this experiential learning model-based mathematics module through the image on the cover.

In the content design, researchers select and collect teaching materials using *experiential* learning model to improve the mathematical literacy skills of junior high school grade VIII students, the system of linear equations in two variables materials, and to meet one of the criteria that teaching materials must be interesting and can help students to achieve basic competencies. So that teaching materials are made according to needs and match the basic competencies students will achieve. Unlike teaching materials in general, this teaching material is packaged more attractively by providing variations in colors and images, using language that is easy to understand, and systematic by presenting problems at the beginning of each sub-chapter so that it can make it easier for students to understand a concept in solving problems.

The preparation of the lesson plan, can be done in steps: 1) Write down the identity (subjects, classes, programs, semesters, subject matter, number of meetings, time allocation), 2) Compile Competency Standards, Basic Competencies, and indicators based on the 2013 Curriculum Content Standards, 3) Compile learning objectives based on indicators, 4) Compile learning materials in accordance with learning objectives, 5) Compile learning methods, 6) Compile learning activities (introduction, core, closing), 7) Determine tools, teaching materials, and learning resources, 8) Determine assessment. At this stage, the design of a learning outcome test grid in question items and alternative answers is also carried out. The test that is prepared is a test in the form of a description to measure students' mathematical literacy skills.

Table 1. Test Question Items

No	Questions
1	<div data-bbox="271 1380 615 1704" data-label="Image"> </div> <p data-bbox="638 1357 1088 1570">Before the holiday was over, Malika and Dad went to the bookstore to buy notebooks and drawing books. Malika bought four notebooks and two drawing books for IDR 20,000.00. Dad also bought two notebooks and one drawing book for IDR 10,000.00.</p> <p data-bbox="638 1608 1088 1704">Is the information above a system of linear equations in two variables? Explain!</p>

2		Retno bought 3 kg of pears and 4 kg of apples for IDR 265,000.00, and at the same market, Nopi bought 2 kg of pears and 2 kg of apples for IDR 150,000.00. Make a mathematical model of the problem! How much does one pear and one apple cost?
---	---	---

3.3 Development Phase

The first activity at this stage is creating a learning module and then validating the module on the validator. The module developed is teaching material with specifications in the form of printed media, which are arranged according to the design stage. At this stage, instruments were also developed in lesson plans, student response questionnaires, teacher response questionnaires, student activity sheets, teacher ability sheets to manage learning, and learning outcomes tests.

Teaching materials are designed with computer application programs, namely Microsoft Office Word 2016 and Corel Draw X9. This teaching material uses an experiential learning model with orientation syntax, reflective observation, preparation of abstract concepts, and applications that differentiate it from previous module. Apart from that, this module can also improve students' mathematical literacy skills because the questions are based on real experiences in everyday life. As explained, mathematical literacy is the ability to formulate, use, and interpret mathematics in various contexts of real experience. The following is a display of the contents of a mathematics module based on an experiential learning model.

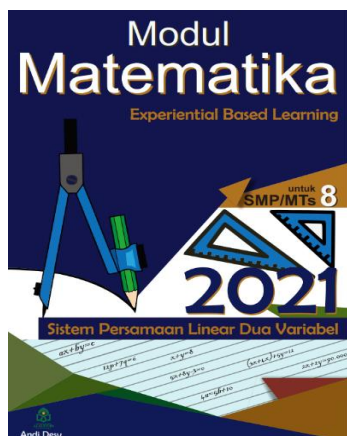


Fig. 1. Front Cover Page

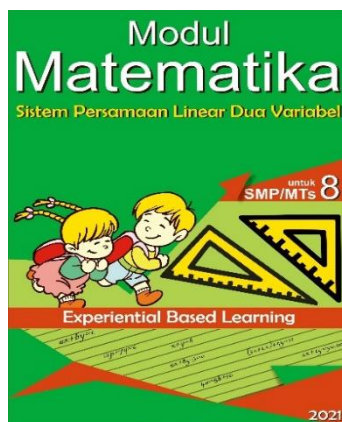


Fig. 2. Final Cover Page

SISTEM PERSAMAAN LINEAR DUA VARIABEL

A. PERSAMAAN LINEAR DUA VARIABEL

TUJUAN PEMBELAJARAN (ORIENTASI).

1. Siswa mampu menjelaskan Persamaan Linear Dua Variabel.
2. Siswa mampu menyelesaikan masalah nyata Persamaan Linear Dua Variabel.

Ingatkah kalian tentang materi Persamaan Linear Satu Variabel? Sangat berkaitan bukan dengan Persamaan Linear Dua Variabel? Oleh karena itu, untuk memahami pengertian dan konsep dasar PLDV, coba perhatikan gambar di bawah ini!



Gambar ini: sayur
(Sumber: giant.pertanian)

Coba tebak gambar apakah di atas? (orientasi pada pengalaman)

Jawab:
 Ana membeli 8 sayur di pasar yang terdiri dari wortel dan jagung.

Miskikan:



wortel = x



jagung = y

Maka, model matematika dari persamaan diatas adalah $x + y = 8$.

Fig. 3. Content Page

Data on the practicality of the teaching materials developed were obtained from student and teacher response questionnaires. The results of data analysis for student and teacher response questionnaires to see the level of practicality of experiential learning model-based module. The results of the analysis of student responses to the student module in the trial showed that 87% of students responded positively to the learning module. Then, the analysis of teacher responses to the module showed that teachers gave 97.5% positive responses.

There are three components to measure effectiveness: the teacher's ability to manage learning, student activities, and learning outcome tests. Based on the results of data analysis of the teacher's ability to manage mathematics learning using experiential learning-based module in the trial, the average teacher ability score was 4.6, which means that the teacher's ability to manage mathematics learning using *experiential learning-based* module is in the "excellent" category and has fulfilled one of the components of effectiveness. The analysis results of the percentage of student activity in the learning process in the trial were obtained 100%, meaning that student activity in the learning process was "very good." More analysis can be found in the appendix. It can be concluded that student activities in the learning process are effective.

Analysis of student learning outcome test scores using *experiential* learning model-based teaching materials which are assessed based on learning outcome test assessment criteria as follows:

Table 2. Learning Outcomes Test Assessment Criteria

Interval	Predicate	Category	Frequency	Percentage
91-100	A	Very Good	20	71,42%
75-90	B	Good	8	28,58%
60-74	C	Good Enough	0	0
< 60	D	Not Good	0	0
Total			28	100%

Table 2 shows that out of 28 students taking the test, there are 20 students in the very good category, 71.42%, and eight students in the good category, with a percentage of 28.58%. This shows that students gain a varied understanding of the material of a system of linear equations in two variables.

3.4 Implementation Phase

This stage was carried out from 14 February 2022 to 24 February 2022 and was tested on 28 class VIIIA students at SMPN 45 Makassar located at Jl. Timor District. Wajo, Makassar City. At this stage, teacher explain the material on systems of linear equations in two variables. At the last meeting, the researcher gave learning outcome test questions to test students' understanding of the material that had been studied and asked students to fill out a student response questionnaire for the module that had been developed. This stage can determine the results of practicality and effectiveness through instrument analysis.

3.4 Discussion

This stage is carried out to test the practicality and effectiveness of module based on practicality criteria seen from teacher and student responses. Teachers and students gave responses in the "very positive" category so that the learning module meets the criteria of practicality.

The effectiveness of teaching materials can be seen from the results of student learning tests, which show that of the 28 students who took the test, 20 answered with very good category. Eight students lacked literacy skills. In addition to student learning outcomes tests, observations of student activities consisting of 10 observation categories were carried out, with the average student activity being in the very good category, which means students gave a positive response to the learning process through the help of *experiential* learning-based module, and observation of the teacher's ability to manage learning was in the very good category which means researchers as teachers have a good mastery of the learning process In the classroom using *experiential learning* model-based module. Based on this, it means indicating that the teaching materials used meet the criteria for effectiveness.

3.5 Evaluation Phase

The final result of the product of this study is teaching materials in the form of experiential learning-based module on two-variable linear equation system material. As stated earlier, researchers first analyze problems related to real experiences in everyday life and pay attention to background knowledge to achieve success in the learning process. as a form of implementation of the experiential learning model.

According to Trianto (2013), a teacher must be more active, creative, and innovative in finding and collecting materials needed in the learning process. A teacher's success in learning at school, must certainly have insight, knowledge, understanding, and creativity in managing teaching materials. The more complete the material collected and the more comprehensive the teacher's insight and understanding of the material, the better the learning will tend to be carried out in class. Based on the problems above, it is known that what is needed by teachers and students is teaching materials in the form of module that can actively involve students in the learning process and can improve students' mathematical literacy skills.

This module is designed to help students achieve learning goals and improve their mathematical literacy skills. Module is one type of teaching material that becomes an

interactive learning resource designed systematically, so its use can be without an educator or facilitator in achieving learning objectives.

The validation results of teaching materials and research instruments are very valid. Teaching materials and instruments declared valid by both validators are ready to be tested. In line with research conducted by Syarifah, Sunismi dan Alfiani [26], the results of research and development are in the form of interactive teaching materials with educational games containing literacy and Strengthening Character Education system of linear equations in two variables materials for grade VIII junior high school students which aims to determine the validity of the products produced. According to material experts, design experts, media, practitioners, and users, interactive teaching material products received an average score of 4.5. So, the results of research conducted by Syarifah and the researchers themselves obtained a very valid category, which means it can be used at the trial stage.

Teaching materials developed and revised based on input from both validators become teaching materials suitable for use at the trial stage. The trial phase was carried out to obtain an overview of data in the form of practical data, which included teacher response questionnaires and student response questionnaires. Effectiveness data included observation sheets of teacher ability in managing learning, observation sheets of student activities, and learning outcomes tests in the form of mathematical literacy ability tests.

In the implementation of the research, obstacles were found in the trial activities of mathematics module based on experiential learning models on the material of the system of linear equations in two variables. The obstacle is that students find it difficult to change study habits and just sit watching the teacher explain. Students find it difficult because they have to be active in the learning process, where students have to solve problems in the module. This is not usually done, so the trial researchers' initial meeting found it difficult to direct students. Therefore, researchers are expected to develop products that can deliver students more actively in the learning process, either with different materials or products, for example, based on educational games or local wisdom.

This research and development results show that the mathematics module based on the experiential learning model in terms of all aspects can be declared very valid. However, several suggestions for improvement must be considered for the completeness of the teaching materials being developed. The results of the validity analysis show that the teaching materials developed effectively improve mathematical literacy skills. The results of the analysis of learning outcomes tests, the analysis of student activities, and the analysis of the teacher's ability to manage learning are in the very good category.

The novelty value of the research results is that the material used is a system of linear equations in two variables material with an experiential learning model that relates directly to the real experience used as a model in the module. Teaching materials in the form of module based on experiential learning have met the criteria of validity, practicality, and effectiveness.

4 Conclusion

Based on the discussion in the previous section, the conclusions that can be drawn from this research include: (1) Module developed using the ADDIE development model are the analysis stage, design stage, development stage, implementation stage, and evaluation stage to produce model-based module experiential learning on valid, practical and effective two-variable linear equation system material. (2) Valid criteria are seen based on the results of mathematics module, with the average teaching materials and instruments meeting very valid criteria. Practical criteria are seen based on the results of the analysis of student responses and teacher responses, with the average of both responses being in the very positive category. Thus, the developed module meet practical criteria. Effective criteria are based on three

indicators: the teacher's ability to manage learning, student activities, and learning outcome tests. The effectiveness of teaching materials can be seen from the results of student learning tests, which are in the very good category, and eight students are in the good category. In addition to the student learning outcomes test, observations of student activities consisting of 10 observation categories were carried out, with the average student activity being in the very good category and also observing the teacher's ability to manage learning which was in the very good category which indicated that the teaching materials used met the effectiveness criteria.

References

1. M. A. Ma'arif, TA'LIM J. Stud. Pendidik. Islam, **2**, 2, 136–152 (2019)
2. N. Setyawati, *Analisis Kesalahan Berbahasa Indonesia: Teori dan Praktik*. (Yuma Pustaka, Surakarta, 2010)
3. Cahyani and Sutriyono, J. Teor. dan Apl. Mat., **2**, 1, 26–30 (2018)
4. S. H. Mustamin, *Psikologi Pembelajaran Matematika*. (Alauddin University Press, Makassar, 2013)
5. OECD, *Programme For International Student Assessment (PISA) Result From PISA 2018*, 2018.
6. W. Afriyanti and Kartono, *Pengembangan Literasi Matematika Mengacu PISA Melalui Pembelajaran Abad Ke-21 Berbasis Teknologi*, J. Prism. Prising Nas. Mat., **1** (2018)
7. Arvyaty, Salim, and E. Maryanti, Pros. Semin. Pendidik. IPA Pascasarj. UM, **2**, 19–29 (2017)
8. I. R. Muslimah and E. Ladyawati, JKPM (Jurnal Kaji. Pendidik. Mat., **2682**, 2, 205–218 (2023)
9. I. Bafadal, *Pengelolaan Perpustakaan Sekolah* (Bumi Aksara, Jakarta, 2011)
10. K. S. P. Wahyuni, I. M. Candiasa, and I. M. C. Wibawa, ENDASI J. Pendidik. Dasar Indonesia, **5**, 2, 301–311 (2021)
11. M. Nu'man, *Pengembangan Bahan Ajar Statistika Penelitian Pendidikan*, 2019
12. Kartini and A. Nuranisa, Anim. Genet, **39**, 5, 561–563 (2014)
13. S. Suhartini and R. H. Santoso, J. Ris. Pendidik. Mat, **1**, 1, 69–76 (2014)
14. M. W. Setiyadi, Ismail, and H. A. Gani, J. Educ. Sci. Technol, **3**, 2, 104 (2017)
15. D. Rahdiyanta, *Teknik Penyusunan Modul Pembelajaran*, Academia, 1–14 (2016)
16. G. L. Saputri, Wardono, and I. Karisudin, *Pentingnya Kemampuan Literasi Matematika dan Pembentukan Kemampuan 4C dengan Strategi REACT (Relating, Experiencing, Applying, Cooperating, Transferring)*, Prism. Pros. Semin. Nas. Mat, **2**, 563–571 (2019)
17. A. R. Afrilina, Y. Haryono, and L. H. Jufri, JKPM (Jurnal Kaji. Pendidik. Mat, **8**, 1, 15 (2022)
18. B. Ojose, J. Math. Educ, **4**, 1, 89–100 (2011)
19. D. A. Sholihah, W. N. Shanti, and A. A. Abdullah, J. Ilm. Pendidik. Mat, **7**, 3, 383–390 (2019)
20. N. K. Sriani, I. M. Utama, and I. A. M. Darmayanti, e-Journal Univ. Pendidik. Ganesha, **3**, (2015)
21. A. Syamsi, Al Ibtida J. Pendidik. Guru MI, **1**, 1, 1–15 (2014)
22. C. F. Conrad, *Experiential Learning*, (2019)
23. D. Handayani and D. V. Rahayu, M A T H L I N E J. Mat. dan Pendidik. Mat, **5**, 1, 12–25 (2020)
24. C. Peterson, J. Educ. Multimed. Hypermedia, **12**, 3, 227–241 (2003)
25. Trianto, *Model Pembelajaran Terpadu*. (Bumi Aksara, Jakarta, 2013)
26. I. D. Syarifah, Sunismi, and Alfiani, J. Penelitian, Pendidikan, dan Pembelajaran, **14**, 9, 2019.