Teaching Material Refirement Training Through the Making of A Mathematic Module for Teacher Working Group (KKG) Clutch 9 District Sukun, Malang City

Dyah Triwahyuningtyas[1]*, Prihatin Sulistyowati[2], Novia Eka Mahmuda[3]
[1, 2, 3] Primary Education Department, Faculty of Education, University of Kanjuruhan Malang, Malang, Indonesia
* Corresponding author: dyahtriwahyu@unikama.ac.id

ARTICLE INFO

Article history
Received October 9, 2020
Revised October 14, 2020
Accepted November 4, 2020
Available Online November 15, 2020

Keywords
Elementary School Teacher
Mathematic Module
Teaching Material

ABSTRACT

Community service activities aim to compile a mathematics module to improve teacher performance as a form of professionalism in carrying out their profession. The refresher training activities for mathematics teaching materials and solving math problems for Elementary School Teachers in Cluster 9 Sukun District Malang were carried out well. There are three kinds of activities in the series, namely the lecture method by explaining the module material in detail, the second is the discussion method on the mathematics module material and the third practical exercises (drill practice) the teacher applies to compiling the module framework. Based on the pre-test score for filling in the module obtained 60.5% while the postest score obtained 80%, the training activity showed an increase of 42.5% so that it was said to be successful as seen from the increase in the module writing training. The results of the dedication activities show the teacher's ability to strengthen the material in making mathematics modules through lectures, discussions and practical exercises (drill practice).

1. Introduction

The elementary school curriculum in mathematics learning builds solid basic abilities about understanding concepts, ideas, ideas, rules, logic by reasoning in solving life problems (Kemdikbud, 2013) with the existence of the 2013 curriculum policy as a strategic policy in facing the future as a efforts to be inspirational in facing future challenges (Ratnawati: 2019) even though students still think that mathematics is difficult because abstracts are full of numbers and formulas. The implementation of the 2013 curriculum is related to the ability of teachers to apply approaches, strategies, models, methods and learning media in achieving competence. Planting concepts in mathematics in the use of the 2013 curriculum is related to thematic learning.

Thematic learning is learning to link concepts involving several subjects to provide meaningful experiences for students (Akbar: 2014). This thematic learning is easier for students to understand because it is presented in the form of themes related to students'

Please cite this article as: Triwahyuningtyas, D., Sulistyowati, P., & Eka Mahmuda, N. (2020). Teaching Material Refirement Training Through the Making of A Mathematic Module for Teacher Working Group (KKG) Clutch 9 District Sukun, Malang City. Jurnal Dedikasi, 17(2), 33-38. doi:https://doi.org/10.22219/dedikasi.v17i2.14703

daily lives. Curriculum 2013 is expected that teachers can create innovation and creativity in the use of methods, strategies, approaches, especially the delivery of material in classroom management.

Learning material in textbooks needs to be improved in geometry material according to Kahfi (1997: 31) so that it is necessary to develop an attractive learning quality based on IT so that students do not feel bored and reduce responses regarding difficult mathematics learning. To maximize students to be independent in learning, it is necessary to provide independent teaching materials that can be used at school and at home.

The reality is that there are still many teachers in using ready-made teaching materials such as thematic books that have been provided by the government, this has an impact on the lack of understanding of the material in developing independent student creativity in accordance with the results of Ladamay's research (2013) that the implementation of thematic learning in the field is still lacking, especially the material.

Teaching materials in the form of modules independently learn according to the abilities of each individual student effectively, that is, the modules are developed not depending on other media in accordance with one of its characteristics, namely the module material is obtained by renewal and adapted to the daily life of students. According to the results of research (Wahyuningtyas, 2017) regarding the development of learning modules related to the context of students, it has contributed to the improvement and acquisition of learning outcomes. This is also supported by Maharani (2017) which states that learning mathematics requires concepts in understanding and is logical, strengthening reasoning in mathematics solving.

The problems faced by elementary school teachers in Cluster 9 Sukun District Malang are, among others: (1) the meetings held so far have only coordinated the making of math tryout questions, (2) the teacher competence development program through the development of teaching materials is still not running optimally.

This is in accordance with the above problems, therefore the proposer proposes Community Service Activities in refreshering mathematics materials through making independent teaching materials in the form of modules that can be used by elementary school students in Cluster 9 Sukun District Malang. This Community Service activity aims to refresher mathematics teaching material through the creation of mathematics modules.

Based on the above problems, to overcome the problems faced by elementary school teachers, the problem-solving framework and solutions offered in a brief solution include:

1. Explain and provide an understanding of mathematics material, the principles and methods of writing mathematics modules through giving examples and elements in module writing.
2. Discuss material problems and mathematical models.
3. he application of the teacher to write the component design for the mathematics module in solving problems.

The targets in the community service program are elementary school teachers in cluster 9 of Sukun Malang District. Methods that are considered appropriate are lecture methods, discussions and practice exercises (drill practice) solving elementary mathematics problems.

2. Methods

The method of implementation is used in this community service as follows:

Please cite this article as: Triwahyuningtyas, D., Sulistyowati, P., & Eka Mahmuda, N. (2020). Teaching Material Refirement Training Through the Making of A Mathematic Module for Teacher Working Group (KKG) Clutch 9 District Sukun, Malang City. Jurnal Dedikasi, 17(2), 33-38. doi:https://doi.org/10.22219/dedikasi.v17i2.14703

1. Lecture Method, a detailed explanation of the module material includes understanding modules, analyzing needs, compiling designs, collecting and compiling module materials, preparing evaluations, covering designs
2. Discussion method, presentation of problems in mathematics material in schools and mathematics about the material in the mathematics module to solve problems.
3. Practice practice (drill practice), the application of the teacher compiles a modu framework, for example mapping the material, formulating the topics that must be present in each learning activity, material formulation, material presentation and practice questions and student assignments, and assessment guidelines.

The evaluation design is used in measuring the success of the implementation of the activity, an evaluation design is compiled in the form of processes and results.

Assessment can be seen from the attendance and participation of participants in the form of documentation and assessment of the results of practical exercises (drill ractice) on the activities that have taken place.

3. Results and Discussion

There are three methods for implementing this service program, with detailed material on each method during the meeting as follows:

The first meeting on Friday 27 September 2019 at 13.00-16.00 starts with the opening. After that, training activities, module writing followed by refresher material for mathematics and mathematics module components, then discussion and steps for the preparation of mathematics modules. The explanation of the workshop material, among others.

3.1 Writers Module Training

In this activity, the aim of this activity is to find out which math problems are considered difficult by elementary students (pretest). The results of the pretest elementary school teachers filling in the module writing guide got a percentage score of 60, 5%.

3.2 Refreshing the material and module components

This activity is carried out by lectures through presentations and questions and answers from both the service team and from the participants regarding difficult material to understand, the lack of independent teaching materials because they still use mathematics books from the government and students still think that mathematics is difficult because they learn numbers and formulas.

Students still think that mathematics is difficult because of numbers and formulas, without realizing that mathematics is very often encountered in everyday life, they do not understand concepts, knowledge and meaning in mathematics, do not understand the origin of a principle so that in the operation of mathematics they still experience intricacy (Selvianiresa: 2017).

Lack of independent teaching materials is still lacking in understanding the concept so that the need for an independent mathematics learning module, so this workshop also needs to be conveyed about how to compose modules and module components.

The way the modules are arranged is presented using the lecture method with the help of a laptop and LCD. A detailed explanation of the module material consists of:

Please cite this article as: Triwahyuningtyas, D., Sulistyowati, P., & Eka Mahmuda, N. (2020). Teaching Material Refirement Training Through the Making of A Mathematic Module for Teacher Working Group (KKG) Clutch 9 District Sukun, Malang City. Jurnal Dedikasi, 17(2), 33-38. doi:https://doi.org/10.22219/dedikasi.v17i2.14703

ISSN : 1693-3214 print | 2721-0111 online

understanding the module, how to analyze needs, compiling designs, collecting and compiling module materials, compiling evaluation, cover design.

Fig. 1. The team provides material

In refresher the mathematics material the service team provides teachers to deliver math material problems in schools and discussions about module material to solve problems.

Fig. 2. The participants discuss the material

The second meeting was held on Saturday, September 28, 2019 at 1:00 p.m. to 4:00 p.m., namely problem solving activities by compiling mathematics modules and reviews with practical exercises (drill practice) then post test module writing. Describe from the workshop material such us, Practice practice (drill practice). After the discussion is over, the teacher applies theory to reality to deepen the material in compiling the module. Indicators are used by the material provided during the training, such as the material framework to be prepared, set performance objectives, set intermediate goals (enable objectives), set the system Set outlines or substance or material outlines to achieve the objectives set material / substance, assignment, question, or practice / practice that must be done or completed by students, evaluation or assessment and answer keys from questions, exercises and or assignments.

Please cite this article as: Triwahyuningtyas, D., Sulistyowati, P., & Eka Mahmuda, N. (2020). Teaching Material Refirement Training Through the Making of A Mathematic Module for Teacher Working Group (KKG) Clutch 9 District Sukun, Malang City. Jurnal Dedikasi, 17(2), 33-38. doi:https://doi.org/10.22219/dedikasi.v17i2.14703

Fig. 3. The exercise made mathematic module

Based on the results of the training, at the end of the activity, a module filling posttest was held showing the average percentage score of 80% while the success score limit was 75%. Therefore, it can be concluded that the filling out of the module writing guide has reached the specified score. The pretest and posttest scores showed an increase of 42.5%, so it can be said that the writing of the module was successful. This is in accordance with Mardati (2016) which states that module writing has very good criteria and in accordance with Tirtayani (2019) states that mentoring has a positive impact, success and satisfaction for teachers.

Attendance and participation in the workshop was attended by 20 participants. All participants attended the activity. Based on the implementation schedule, the implementation time has been carried out correctly, the service activities have been going well and in accordance with expectations. At the end of the event the participants get knowledge about solving the problems that are solved by writing compiling modules.

The results of this service that have been carried out are beneficial to all participants, both teachers and school principals, but also useful for presenters in elementary schools. The teacher gets the benefit and problem solving by refresher the material in the form of how to compose an independent module writing by providing concepts for logical and critical thinking.

Some of the input from the training participants about mathematical problems in the field provided inspiration for the presenters to develop further service activities in solving learning problems. Plans for mentoring primary school teachers in cluster 9 in completing module writing.

4. Conclusion

The service that was carried out for teachers of Cluster 9, Sukun District Malang has been carried out smoothly. The activity begins with a pre-test, refresher mathematics material, provides module component material, makes mathematics modules according to the learning material needs of each grade level and educational background. In the discussion session, the teacher was given the opportunity to ask questions about writing math modules that were not yet understood. Followed by the teacher asked to practice or practice, to make a module outline will later be developed in the form of a finished and complete module and do a post test at the end of the activity

Please cite this article as: Triwahyuningtyas, D., Sulistyowati, P., & Eka Mahmuda, N. (2020). Teaching Material Refirement Training Through the Making of A Mathematic Module for Teacher Working Group (KKG) Clutch 9 District Sukun, Malang City. Jurnal Dedikasi, 17(2), 33-38. doi:https://doi.org/10.22219/dedikasi.v17i2.14703

The training and module writing assistance has gone according to plan. The results of this service activity provide many benefits for teachers and presenters. This service activity is carried out to improve the ability of teachers to strengthen mathematics material in the preparation of mathematics modules.

References

[1] Akbar, S. (2014). Penyegaran Pembelajaran Tematik Berbasis KKNI Kurikulum 2013: makalah kuliah umum. Malang: Universitas Kanjuruhan Malang
[2] Kahfi, M. S.. (1997). Membenahi Pembelajaran Geometri di Sekolah Melalui Teori Van Hiele. For Math, III(2): 31
[3] Kementerian Pendidikan dan Kebudayaan. (2013). Materi Diklat Pelatihan Implementasi Kurikulum 2013 Sekolah Dasar. Jakarta: Badan PSDMPK-PMP
[4] Ladamay, dkk. (2014). Analisis Pembelajaran Tematik Pada Kurikulum 2013 Di Sdn Gadang 1 Malang Dan Sdn Tanjungrejo 1 Malang. Malang: Universitas Kanjuruhan Malang
[5] Maharani, I.N. (2017). Model Pengembangan Bahan Ajar Matematika untuk Sekolah Dasar. Jurnal edukasi. Vol 8 No. 1 April 2017
[6] Mardati, A. (2016). Pengembangan Modul Matematika dengan Pendekatan Kontekstual pada Materi Bagun Datar untuk Mahasiswa PGSD PAUD. Jurnal Pendidikan Sekolah Dasar. Vol. 3 No. 1 Desember 2016
[7] Ratnawati, N & Sukamto. (2019). Pendampingan Pengembangan Perangkat Pembelajaran bagi Guru-Guru IPS SMP dalam Upaya Optimalisasi Implementasi Kurikulum 2013. Jurnal Widya Laksana. Vol. 8 No. 2 Agustus 2019
[8] Selvianiresa, D. (2017). Kesulitan Siswa Sekolah Dasar pada Materi Nilai Tempat Mata Pelajaran Matematika di Kelas I SD. Jurnal Ilmiah Pendidikan Dasar Vol. 2 No. 1 Juni 2017
[9] Tirtayani, L.A, dkk.. (2019). Pelatihan Penyusunan Perangkat Pembelajaran Menggunakan Pendekatan Saintifik. Jurnal Widya Laksana. Vol. 8 No. 2 Agustus 2019
[10] Wahyuningtyas, D.T & Shinta, R.N. (2015). Pengembangan Modul Pembelajaran Penjumlahan dan Pengurangan Bilangan Bulat dengan Pendekatan Contextual Teaching Learning (CTL) Beradasarkan Kurikulum 2013. Malang: Universitas Kanjuruhan Malang.

Please cite this article as: Triwahyuningtyas, D., Sulistyowati, P., & Eka Mahmuda, N. (2020). Teaching Material Refirement Training Through the Making of A Mathematic Module for Teacher Working Group (KKG) Clutch 9 District Sukun, Malang City. Jurnal Dedikasi, 17(2), 33-38. doi:https://doi.org/10.22219/dedikasi.v17i2.14703