

DEVELOPMENT OF MIND MAPPING AND LEARNING OBJECTIVES FLOW (ATP) BASED ON KIKUDUKO FOR MATHEMATICS TEACHERS IN THE MGMP OF JUNIOR HIGH SCHOOLS IN KAYUAGUNG CITY

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Abstrak: Kurikulum merdeka menuntut para guru memahami komponen atau istilah yang ada di dalamnya, salah satunya yaitu ATP atau Alur Tujuan Pembelajaran. Untuk dapat merumuskan ATP, guru juga perlu penguasaan dalam menyusun mind mapping atau peta konsep matematika yang perlu dipelajari oleh siswa. Guru perlu memahami ATP sebagai panduan yang esensial dalam merancang pembelajaran yang efektif dan relevan. Tujuan utama kegiatan ini adalah memberikan pelatihan dan pendampingan kepada guru dalam penyusunan mind mapping dan ATP berbasis Kikuduko dalam upaya meningkatkan kompetensi para guru. Metode yang digunakan adalah presentasi, workshop, diskusi dan pendampingan. Kegiatan dilaksanakan secara daring dan diikuti 21 orang guru SMP dari wilayah Kota Kayuagung. Hasil dari kegiatan pelatihan dan pendampingan penyusunan mind mapping dan ATP berbasis Kikuduko ini adalah peserta pelatihan sudah mampu menyusun mind mapping dan ATP berbasis Kikuduko. Hasil analisis angket respon kepuasan aspek pendampingan yang dapat membantu peserta menyusun mindmapping dan ATP sebesar 93.75%, aspek kedua terkait pengetahuan peserta tentang mindmapping dan ATP sebesar 94.375%, aspek ketiga tentang kepuasan peserta terhadap materi yang dikaji dan pendampingan yang diberikan sebesar 95%, dan aspek keempat mengenai keterampilan peserta dalam menyusun mindmapping dan alur tujuan mendapat respon dari peserta sebesar 88.75%. Kegiatan pengabdian kepada masyarakat ini sangat efektif untuk membantu guru dalam memahami Capaian Pembelajaran dan menyusun Tujuan Pembelajaran dan Alur Tujuan Pembelajaran, serta mengenalkan guru pada mindmapping untuk memudahkan guru dalam menyusun ATP.

Kata kunci: mind mapping, Alur Tujuan Pembelajaran (ATP), Kikuduko

Abstract: "Kurikulum Merdeka" requires teachers to understand the components or terms contained in it, one of which is ATP or Learning Objectives Flow. To be able to compile ATP, teachers also need to master compiling mind maps or maps of mathematical concepts that students need to learn. Teachers need to understand ATP as an essential guide in designing effective and relevant learning. The main objective of this activity is to provide training and assistance to teachers in preparing Kikuduko-based mind maps and ATPs in an effort to increase the competence of teachers. The methods used are presentations, workshops, discussions and mentoring. The activity was carried out boldly and was attended by 21 junior high school teachers from the Kayuagung City area. The results of the training and assistance activities in preparing Kikuduko-based mind maps and ATPs are that the training participants are able to prepare Kikuduko-based mind maps and ATPs. The results of the response questionnaire analysis of satisfaction with aspects of mentoring that can help participants prepare mindmapping and ATP is 93.75%, the second aspect is related to participants' knowledge about mindmapping and ATP is 94.375%, the third aspect is regarding participant satisfaction with the material studied and the assistance provided is 95%, and The fourth aspect regarding participants' skills in compiling mindmapping and goal flow received a response from participants of 88.75%. This community service activity is very effective in helping teachers understand Learning Achievements and compiling Learning Objectives and Learning Goal Flow, as well as introducing teachers to mindmapping to make it easier for teachers to prepare ATP.

Keywords: mind mapping, Learning Objectives Flow, KIKuDuKo

Introduction

The “Kurikulum Merdeka” demands that teachers understand its components or terms, one of which is ATP or Learning Objective Flow (Swadarma, 2013). Teachers need to comprehend ATP as an essential guide in designing effective and relevant learning. ATP is a framework that helps teachers establish clear and measurable learning objectives, as well as organize the necessary steps to achieve those objectives (Magdalena, Fitri, & Mulyaningsih, 2023).

The Learning Objective Flow or ATP is a sequence of learning objectives logically organized according to the learning sequence from the beginning to the end of a phase (Riswakhyuningsih, 2022). Principles of ATP development include being essential, continuous, contextual, and simple. ATP, also known as the learning objective flow, is a systematically and logically arranged series of learning objectives covering the entire learning achievement phase from the beginning to the end (Rindayati, Putri & Damariswara, 2022). ATP serves the same purpose as the syllabus in the 2013 Curriculum, acting as a reference for teachers in lesson planning (teaching modules).

Understanding ATP enables teachers to identify the skills, knowledge, and attitudes they want students to achieve at each stage of learning (Zulaiha, Meisin, & Meldina, 2022). This allows teachers to design appropriate activities and assessments and provide effective feedback to students (Ramatni, et al, 2023). Teachers' understanding of ATP also provides a consistent and structured framework in the learning process (Rafikayati, et al, 2022). With a good understanding of ATP, teachers can plan logical and step-by-step learning sequences (Farhana, 2023). They can integrate material and connect different concepts more effectively, helping students build a more comprehensive understanding and improving the connection between learned concepts.

Furthermore, teachers' understanding of ATP allows them to identify the individual needs and abilities of students. In ATP, teachers can align learning objectives with each student's developmental level, interests, and learning style (Purnawanto, 2022). With a solid understanding of ATP, teachers can provide inclusive learning experiences, support student diversity, and enhance their learning success. The importance of teachers' understanding of ATP is also related to their professional development (Turmuzi, 2023). By studying and applying ATP, teachers can continually develop their skills in lesson planning, teaching strategy selection, and assessing learning outcomes.

In reality, research results from Indaryanti, et al (2019) indicate a mismatch in the competency level indicators, with teachers developing indicators limited to the minimal competency in Basic Competencies when designing and implementing mathematics lessons using the 2013 Curriculum. Similar issues were found concerning the development of mathematics lesson plans using the “Kurikulum Merdeka”. Research shows that there are difficulties for teachers in formulating and organizing ATP in the “Kurikulum Merdeka” (Rindayati, Putri & Damariswara, 2022; Nurcahyono & Putra, 2022). This is also evident among the group of mathematics teachers in the MGMP Mathematics Forum in Kayuagung City. The

Mathematics Teacher Forum (MGMP) in Kayuagung City gathers mathematics teachers from junior high schools in Kayuagung City. According to one representative of the MGMP mathematics group in Kayuagung City, teachers in the mathematics MGMP still face difficulties in formulating ATP in mathematics teaching that aligns with the implementation of the "Kurikulum Merdeka".

The limited knowledge and skills of MGMP Mathematics SMP teachers in Kayuagung in formulating ATP are obstacles to providing quality mathematics education to students in line with the demands of the "Kurikulum Merdeka". Therefore, comprehensive efforts are needed to improve this condition. Intensive training and professional development, further education, and enrichment programs can help teachers enhance their understanding and skills in formulating ATP for mathematics in junior high schools in Kayuagung City. A mentoring program has been carried out by a team to provide training and assistance to teachers in formulating Competency Achievement Indicators (IPK) based on KIKuduko in an effort to improve the competence of teachers in the city of Lubuklinggau (Indaryanti, et al, 2021). The mentoring conducted facilitated teachers in formulating learning objectives and IPK in mathematics teaching using the 2013 curriculum. The preparation of IPK based on KIKuduko is the preparation of competency achievement indicators for student learning based on Competencies, Indicators, keys, supporting elements, and complexes. This sequence of IPK is usually a priority for teachers in teaching so that all indicators of basic competence can be achieved, and no IPK is missed, and all indicators can be realized in the learning devices consisting of lesson plans, teaching materials, Student Worksheets, learning media, and assessment instruments. With the implementation of the "Kurikulum Merdeka", it is necessary to facilitate teachers in formulating lesson plans, especially related to the formulation of learning objectives.

To help teachers overcome their obstacles in formulating ATP in mathematics teaching based on the "Kurikulum Merdeka", mentoring is needed for teachers. Considering the minimal training activities for teachers, especially those involved in the Mathematics Teacher Forum (MGMP) in junior high schools in Kayuagung City, the PkM Team from the S1 Mathematics Education Study Program, FKIP UNSRI, initiated mentoring for junior high school Mathematics teachers in Kayuagung City in formulating mind maps and ATP based on KIKuduko as an effort to improve teacher competence in planning mathematics learning in the "Kurikulum Merdeka". Mind mapping itself is one of the ways that makes it easier for us to formulate ATP.

Mind mapping is an easy way to extract information from within and outside the brain (Faelasofi, 2016). Mind mapping is a way to develop thinking activities in all directions, capturing various thoughts from various angles (Marxy, 2017). Mind mapping, often referred to as a concept map, is a powerful organizational thinking tool that is also the easiest way to place information into the brain and retrieve it when needed (Amin, 2016). The result of mind mapping is a mind map, where a mind map is a diagram used to represent words, ideas, tasks, or anything else associated and arranged around the key idea.

Mind mapping is an excellent learning method used by teachers to improve students' memorization and strong conceptual understanding, and students can increase their creativity through imaginative freedom. Mind mapping is also a technique for summarizing the material

to be learned and projecting problems faced into the form of a map or graphic technique, making it easier to understand. Research results mention the influence of using mind mapping on students' mathematics learning outcomes (Marxy, 2017). The benefits of mind mapping in formulating ATP include making the Learning Objective Flow or ATP/material easier to understand, making the material more directed and organized, improving the creativity and productivity of teachers, and making ATP formulation more effective and efficient.

Additionally, this service activity is also an integrated activity with several courses, including Education Internship and Lesson Planning. Students involved in this service activity can simultaneously apply all the knowledge they have received on campus to be implemented in the schools they accompany and also collect research data for their final projects. As a manifestation of Merdeka Belajar Kampus Merdeka activities, this service activity bridges students who want to directly acquire knowledge by becoming part of the school community while also applying pedagogical and school management knowledge acquired in college.

Method

The PkM (Community Service) activity will be conducted in a hybrid manner, combining face-to-face and virtual interactions through Zoom conference meetings (synchronous) and asynchronous communication via WhatsApp and email. The hybrid implementation method is aimed at enhancing two-way social interaction services despite spatial and temporal constraints (Sartinah, et al., 2022). The implementation model of this PkM activity is a mentoring model designed to enhance teachers' professionalism in preparing for teaching and learning activities, particularly in formulating ATP as part of lesson planning. The objectives of this PkM activity are to train mathematics teachers in formulating ATP for mathematics teaching, assess teachers' responses to the training, and obtain the teachers' work results in the form of a collection of ATP for junior high school mathematics. The mentoring employs methods such as distributing materials, lectures, and demonstration methods, both through individual and group mentoring sessions. The activities are carried out in four stages: preparation, mentoring, implementation, and follow-up stages (Chart 1)

Observation stage includes situation analysis and interviews with several mathematics teachers at the community service location. In the preparation stage, activities include limited discussions with the MGMP (Teachers Subject Association) and handling permits, as well as developing accompanying materials. During the mentoring phase, synchronous activities such as material delivery and asynchronous activities such as mentoring in the preparation of mind maps and ATP through a WhatsApp group are conducted. Implementation is realized through mentoring during teachers' classroom sessions and the evaluation of products developed by teachers. Follow-up actions involve evaluating the activity and providing feedback from speakers, as well as assessing teachers' responses to the community service.

The community service activities were carried out from August 12 to October 14, 2023, both synchronously and asynchronously. Synchronous activities included material delivery and face-to-face mentoring in Kayuagung, as well as presenting mind mapping and ATP tasks via

Zoom meetings. Asynchronous activities were conducted through a WhatsApp group. The opening ceremony took place on August 12, 2023, at the secretariat of the MGMP Mathematics SMP Kayuagung, with an opening speech by the Deputy Dean 2 for Administration, General Affairs, and Finance, FKIP Universitas Sriwijaya. The event was opened by the Secretary of the South Sumatra Provincial Education Office, with 21 junior high school mathematics teachers from Kayuagung participating in the community service. Following the opening, participants were mentored for approximately three months to prepare mind maps and Learning Objective Flow (ATP) for teaching mathematics in their respective classes.

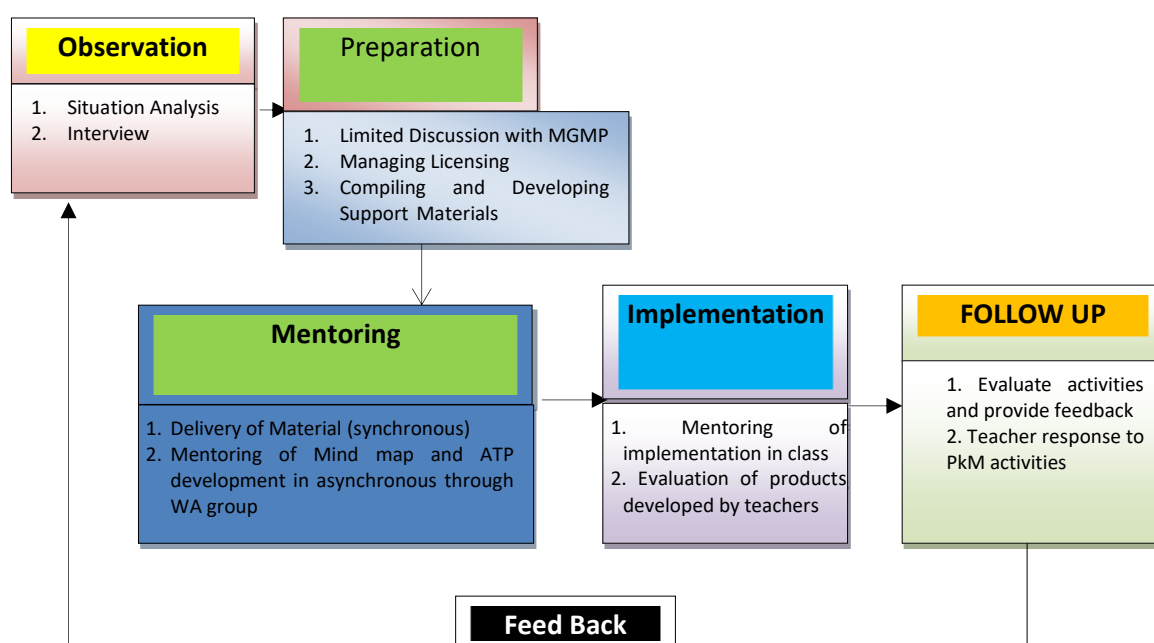


Chart 1. Framework for implementing community service programs

The activity was divided into two sessions. Session 1 took place on August 12, 2023, after the opening ceremony, from 09:00 to 15:30, covering the presentation of the Free Learning Curriculum and the Stages of Mind Mapping and ATP Preparation. The material was presented by two expert lecturers who teach Mathematics Lesson Planning and also PPG lecturers at FKIP UNSRI.

Results and Discussion

At the beginning of the activity, participants were surveyed to assess their initial understanding of mind mapping and ATP. The survey included questions about the class they taught, whether they had implemented the "Kurikulum Merdeka", their familiarity with terms such as Learning Outcomes/ CP, Learning Objectives/ TP, and Learning Objectives Flow/ ATP, and their ability to formulate TP and ATP. The responses are presented in [Figure 1](#).

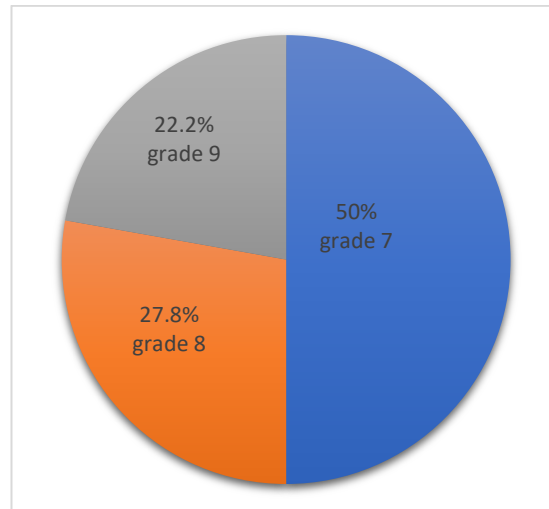


Figure 1: Distribution of teachers based on the classes they teach

In response to the first question regarding the class they teach, 50% of the teachers handle mathematics for grade 7, 27.8% for grade 8, and 22.2% for grade 9.

Has the teacher already implemented the "Kurikulum Merdeka"? Regarding the second question, 38.9% of the teachers had implemented the "Kurikulum Merdeka", while 61.1% had not. The responses are presented in [Figure 2](#).

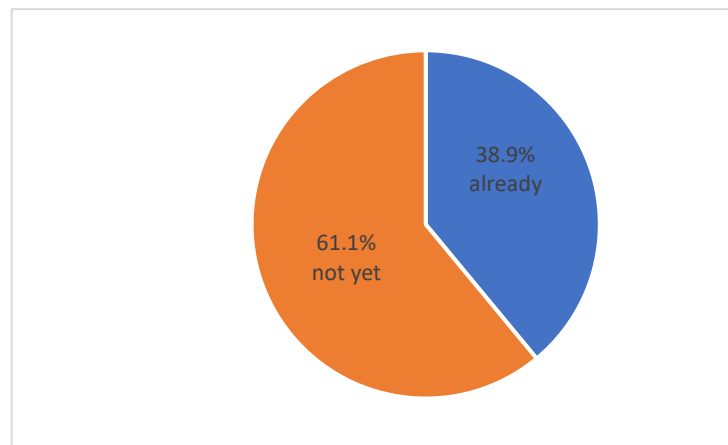


Figure 2. The number of teachers have already implemented the "kurikulum merdeka"

The third question is, do you know the terms CP, TP and ATP? For the third question about knowing the terms CP, TP, and ATP, 83.3% were familiar but not entirely clear, and 16.7% were both familiar and clear about the terms. The responses are presented in [Figure 3](#).

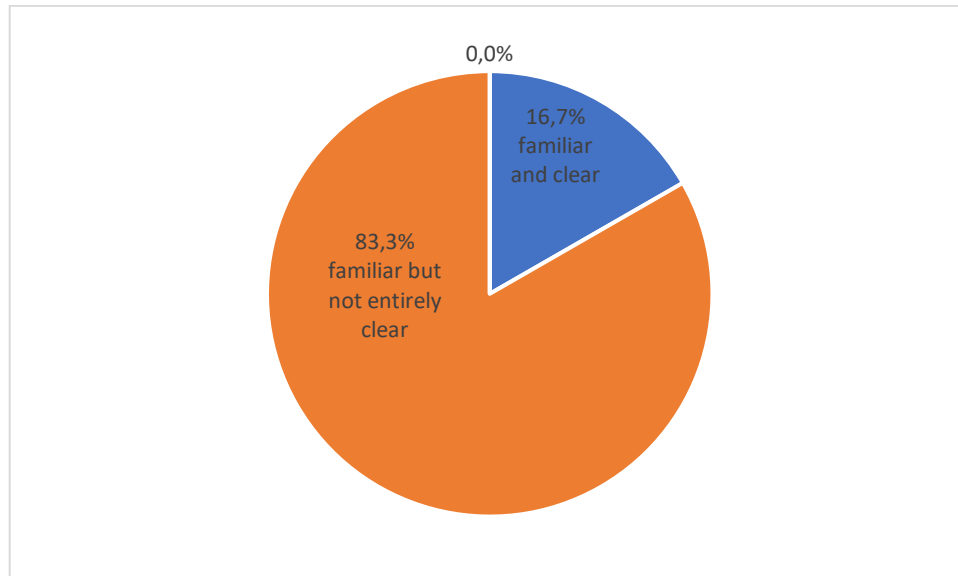


Figure 3. The number of teachers already know the terms CP, TP, and ATP

The fourth question, have you ever prepared TP and ATP? In response to the fourth question, 88.9% of the teachers had extensive experience formulating TP and ATP, while 11.1% were doing it for the first time. The responses are presented in [Figure 4](#).

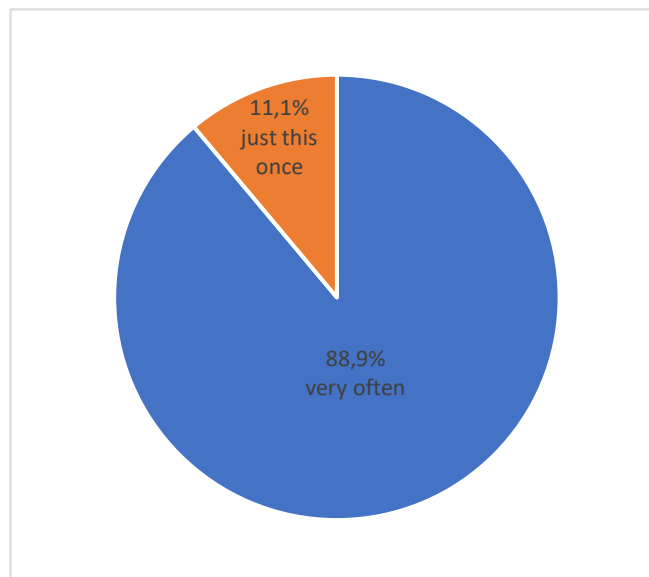


Figure 4. The number of teachers already develop TP and ATP

Question five: What difficulties did you experience when compiling TP and ATP? The fifth question revealed that teachers faced difficulties in reading CP effectively (16.7%), formulating TP and CP (72.2%), developing themes in TP and CP (61.1%), and developing themes in TP and ATP (66.7%). The responses are presented in [Figure 5](#).

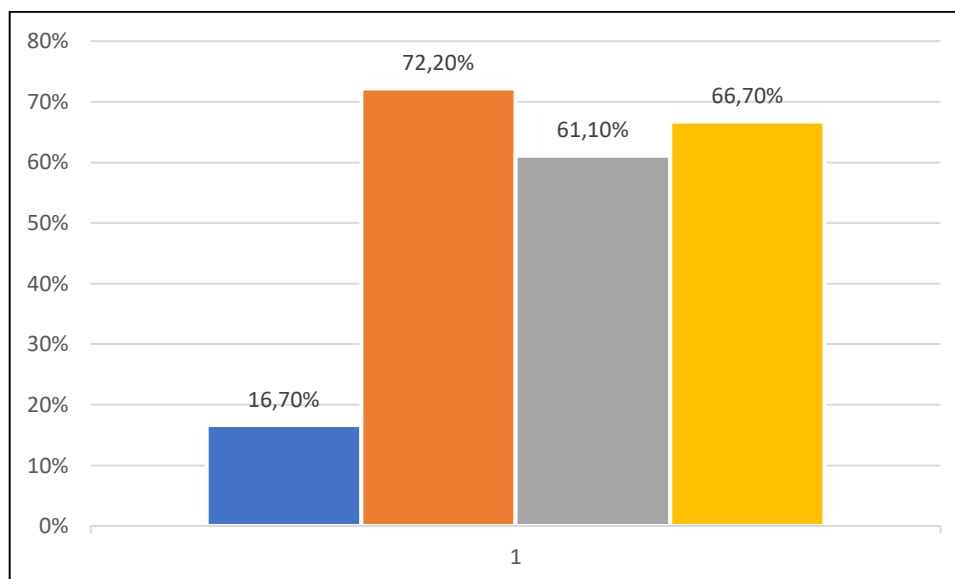


Figure 5. Teachers' difficulties in develop TP and ATP

Based on the survey conducted at the beginning of the meeting, most participants had not implemented the "Kurikulum Merdeka" in their schools. They had limited understanding of the Learning Objective Flow (ATP) and were learning to formulate it for the first time. Additionally, participants faced difficulties in formulating ATP, including challenges in reading CP effectively, formulating learning objectives from CP, developing themes in TP from CP, and developing themes in TP and ATP.

In line with the statement by Windayanti (2023) that the challenges teachers face in implementing the Free Learning Curriculum are difficulties in analyzing CP, formulating TP, and composing ATP and teaching modules, determining teaching methods and strategies, lack of technological skills, and the inability to use various teaching methods and media. Other challenges include the extensive nature of teaching materials and project selection.

Subsequently, the material presentation covered explanations about mind mapping, the flow of learning objectives, and the steps in creating mind mapping and ATP. Following the speaker's presentation, there was a 60-minute Q&A session. After the Q&A session, the workshop on creating mind mapping and ATP based on Kikuduko was conducted. Participants were asked to formulate ATP according to their respective classes. This session also included additional Q&A for participants still experiencing confusion and difficulties in creating mind mapping and ATP based on Kikuduko. Documentation of the community service activity is shown in Figure 6. After the first session, participants were given one month for independent work. They were required to create mind mapping and learning objectives for Mathematics subjects in Phase D. The results of participants' independent work would serve as a guide for teachers in their respective classrooms.

Creating mind mapping and learning objectives can be considered both easy and difficult for those unfamiliar with the subject. Through this activity, participants felt their knowledge in creating mind mapping and learning objectives improved. During the process, teachers could consult and ask questions to the speakers via email or the WhatsApp group.



Figure 6. Group photo of the PkM team and participants

Session 2 took place on September 30, 2023, through a Zoom meeting conference (Figure 7). The agenda included presenting participants' independent work and providing feedback from the outreach team. During the presentation of their work, participants displayed mind maps for Mathematics Phase D and the learning objectives they had prepared.



Figure 7. Implementation of Session 2 Activity

Following the synchronous activities in Session 2, asynchronous activities were carried out to revise the mind maps based on feedback from speakers. Participants were then allowed to develop learning objectives based on Kikuduko, using the previously created mind maps. Session 3 took place on October 14, 2023, with the agenda of presenting the final products, mind maps, and ATP, followed by the closing of the activity.

Findings during the training and mentoring activity, the community service training and mentoring activity revealed that the majority of teachers were still confused about creating mind mapping and ATP based on Kikuduko. Until then, teachers had obtained ATP downloaded from the internet or lesson plans prepared with MGMP teachers. Ideally, each teacher should create their own ATP, considering cognitive abilities and student needs. However, after this training and mentoring activity, junior high school mathematics teachers in the Kayuagung area were able to independently create ATP for their respective classes, as evidenced by the submitted tasks.

A similar community service activity conducted by Gradini and Zulmaulida (2022) on training learning model and learning tool development also successfully achieved three main

objectives: 1) improving teacher quality in selecting and developing learning models into learning tools; 2) enhancing teachers' ability to apply learning tools; and 3) strengthening the role of foundations and school principals as stakeholders in enhancing teachers' pedagogical capacity. After receiving training and mentoring, teachers' understanding of learning model syntax increased.

In general, the implementation of this community service activity went smoothly without significant obstacles. However, some participants experienced disconnection from the Zoom meeting during synchronous activities due to signal disturbances. After the evaluation and presentation of the creation of mind mapping and ATP based on Kikuduko, participants were given a satisfaction survey. The survey consisted of four aspects, broken down into several questions. The aspects inquired about were related to mentoring that could help participants create mind mapping and ATP, participants' knowledge of mind mapping and ATP, participant satisfaction with the material studied and the mentoring provided, and participants' skills in creating mind mapping and learning objectives.

This activity received positive responses from participants, as evidenced by the high satisfaction percentages. Participants appreciated the relevance of the activity to their work (99%), the attractiveness of the material presentation (95%), the practicality and/or ease of understanding the material (92%), the program design (93%), and feedback (96%). The aspect related to recommendations received a 96% response, suggesting that similar and continuous training should be conducted to allow teachers to continually improve their competencies even after completing their formal education. The participant response percentages are presented in Figure 8.

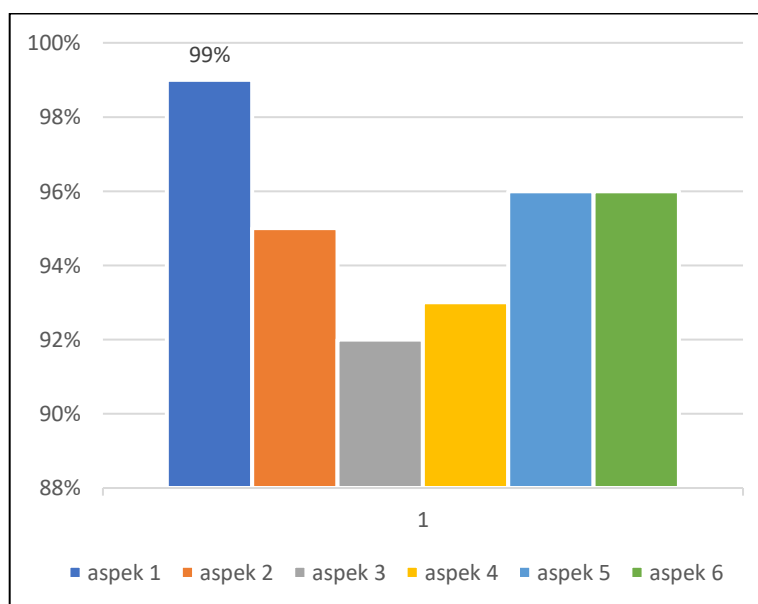


Figure 8. Participant response infographic

Conclusion

Most teachers highly appreciated this activity as they found it beneficial for enhancing their understanding of the "Kurikulum Merdeka". The analysis of the satisfaction survey yielded

positive results, with high satisfaction percentages from the participants. The community service activity proved to be effective in helping teachers understand the Learning Objectives and in formulating Learning Objectives and Learning Flow. Furthermore, it introduced teachers to mind mapping to facilitate the creation of ATP. Participants expressed hope for the continuation of similar activities, especially those related to creating teaching modules. They also suggested that Upgrading activities like this could be conducted outside of teaching hours to avoid disrupting school schedules, for example, during student semester breaks. The participants hoped that mentoring activities would provide benefits to teachers in the Kayuagung City area and its surroundings.

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