



Mathematics Teachers' Perspective of *Merdeka Mengajar* as an Application to Learn and Share

Fadhil Zil Ikram^{1*}, Zul Jalali Wal Ikram², M. Azhari Panjaitan³

¹Pendidikan Matematika, Universitas Sulawesi Barat, Kabupaten Majene, Indonesia

²Nautika, Politeknik Pelayaran Barombong, Makassar, Indonesia

³Pendidikan Matematika, Universitas Negeri Medan, Medan, Indonesia

*Correspondence: E-mail: fadhilzikram@unsulbar.ac.id

A B S T R A K	A R T I C L E I N F O
<p><i>Penelitian kualitatif ini bertujuan untuk menginvestigasi perspektif guru matematika mengenai platform Merdeka Mengajar (PMM). Responden dari penelitian ini adalah 28 guru matematika yang mengetahui atau pernah menggunakan PMM. Penelitian ini dilaksanakan dengan menggunakan Teknik wawancara semi terstruktur. Teknik analisis data terdiri dari tiga tahap yaitu kondensasi data, tampilan data, dan pengambilan kesimpulan. Hasil penelitian menunjukkan bahwa guru matematika menganggap bahwa PMM merupakan tempat belajar mengenai kurikulum Merdeka dan berbagi perangkat pembelajaran serta karya terkait pembelajaran. Manfaat PMM menurut para guru adalah untuk mengembangkan kompetensi guru dan menginspirasi guru dalam merencanakan pembelajaran. Kekurangan PMM yang dikemukakan oleh guru beragam, mulai dari keterbatasan format file sampai ke kurangnya sosialisasi. Saran yang dikemukakan oleh guru beragam, mulai dari perlunya tim verifikasi dan penilai sampai ke perluasan akses akun PMM yang memungkinkan mahasiswa dan freshgraduate jurusan pendidikan untuk turut menggunakan PMM. Terkait fitur-fitur, kebanyakan guru menggunakan fitur pencarian perangkat pembelajaran, asesmen, dan capaian pembelajaran. Implementasi hasil belajar di PMM oleh guru matematika terdiri dari penggunaan unsur permainan, implementasi pembelajaran yang kontekstual dan berpusat pada siswa, workshop kurikulum, dan asesmen diagnostik.</i></p>	<p>Article History: Received: 2025-05-13 Revision: 2025-07-02 Accepted: 2025-09-02 Published: 2025-11-01</p> <p>Kata Kunci: Merdeka Mengajar, Guru Matematika, Platform Pembelajaran Digital, Implementasi, Kompetensi Guru</p>
<p>A B S T R A C T</p>	
<p><i>This qualitative research aims to investigate mathematics teachers' perspectives on the Merdeka Mengajar (PMM) platform. The respondents of this study were 28 mathematics teachers who knew or had used PMM. This research was conducted using semi-</i></p>	<p>Keywords: Merdeka Mengajar, Mathematics Teachers, Digital Educational Platform, Implementation, Teacher Competency</p>

structured interview techniques. The data analysis technique consists of three stages, namely data condensation, data display, and conclusion making. The results showed that mathematics teachers consider PMM a place to learn about the Merdeka curriculum and share learning tools and works related to learning. The benefits of PMM, according to teachers, are to develop competencies and inspire teachers in planning lessons. The shortcomings of PMM stated by teachers vary, ranging from the limitations of the file format to the lack of socialization. Suggestions stated by teachers varied, ranging from the need for a verification and assessment team to the expansion of PMM account access that allows undergraduate students and fresh graduates majoring in education also to use PMM. Regarding features, most teachers use the search feature for learning tools, assessments, and learning outcomes. The implementation of learning outcomes in PMM by mathematics teachers consists of using game elements, implementing contextual and student-centred learning, a curriculum workshop, and a diagnostic assessment.

© 2025 Kantor Jurnal dan Publikasi UPI

1. PENDAHULUAN

Mathematics is one of the most important subjects because of its many applications in the real world. In addition, it also teaches us to think systematically and critically. According to A & Sihotang (2021), most students in Indonesia suggest that mathematics is a difficult lesson to understand, and the class is often very monotonous due to teachers who are less creative and less active in innovating to provide interesting learning. In this case, one of the important elements that needs to be developed in education is how mathematics teachers develop their competence as teachers.

Since the COVID-19 pandemic hit, the education sector has undergone major changes. All elements in education, including learning, must adapt to using online media, platforms, or applications (Ikram & Rosidah, 2023). The government provides a lot of assistance, including to teachers, during the pandemic. This is because teachers are an important element in the education sector. Teachers are in charge of preparing students to face the challenges of an increasingly complex and increasing era (Mamoh & Bete, 2019). In addition, teachers play an important role in providing high-quality learning opportunities to students and promoting their learning (König et al., 2021).

One of the tasks of teachers is self-development (Safruddin et al., 2020). Self-development is one of the three categories of professional development (Jawahir & Yusuf, 2021), which is carried out to improve professionalism to have competence in carrying out the learning process (Nuryanti et al., 2022). In addition, the aspect of self-development as a component of professional development certainly contributes to improving the quality of education (Sennen, 2020). Self-development is a task that teachers must carry out to improve competence and professionalism so that optimal learning and education quality, and improved performance quality can be achieved (Ambarwati, 2019; Jawahir & Yusuf, 2021; Kartomo & Slameto, 2016; Nuryanti et al., 2022). Self-development activities are an indicator of work productivity and a vital element in supporting their role as agents of change in the educational environment (Andriani et al., 2022; Lestari et al., 2022). Some forms of self-development activities that can be carried out are training, seminars, workshops, courses, comparative studies, and so on (Jawahir & Yusuf, 2021; Kartomo & Slameto, 2016).

During the pandemic and the new normal, various digital platforms have emerged that can help teachers' self-development. Many teachers have begun to switch to utilizing various platforms that have provided online self-development activities (Hollebrands & Lee, 2020). These platforms have a great influence on teachers' teaching practices because teachers interact with various resources in planning and developing their learning (Pepin et al., 2017). The Indonesian government, in providing assistance and support to teachers, has also launched various digital platforms that can develop teacher professionalism by conducting self-development activities.

One of the platforms that can help teachers in developing their profession and teacher innovation is Merdeka Mengajar (previously called Guru Berbagi). This platform facilitates government, teachers, and education practitioners to collaborate and share their ideas and best practices (Jawahir & Yusuf, 2021). Merdeka Mengajar can help teachers design and conduct innovative learning (Setyawan & Syamsuryawati, 2023). By providing a sharing and training platform, the government hopes that teachers can provide the best quality learning for students. This application is also an effort made to enhance teacher professionalism on an ongoing basis (Ni Putu et al., 2023). Therefore, this application is very useful for teachers, especially for those who want to do self-development or develop their competence.

Although the government has launched many self-improvement platforms, including the Merdeka Mengajar Platform (PMM), there is a lack of supporting information and research on

these platforms (Jawahir & Yusuf, 2021). Research by Jawahir and Yusuf (2021) discussed Guru Belajar and Guru Berbagi (now called PMM) and how teachers respond to their self-development using these two applications. Jawahir and Yusuf (2021) used literature data and questionnaires as data sources. The questionnaire was distributed to 28 teachers. The research only discussed in general terms related to the program followed, benefits, reasons for using, and difficulties encountered. Their research did not discuss further suggestions for application improvement, and in more detail the application of knowledge gained from the training program in PMM. Jawahir and Yusuf (2021) also did not specifically discuss what subject teachers responded to. Information related to the experience of teachers of certain subjects is also needed because it can be a more specific reference for teachers to use in their learning.

There was a study conducted by Budiarti (2022) that investigated how mathematics teachers utilized PMM. However, the study did not detail the shortcomings of the platform, examples of classroom implementation, and suggestions from the user experience for the platform. Information related to these aspects is very important because it can be used as a reference in developing and further optimizing PMM so that it can further facilitate and assist teachers in developing their competence. Moreover, the results of the research can make teachers more interested in using PMM because they can find out the benefits that can be obtained and real-life examples of the implementation of the material that has been learned in PMM. Based on the lack of research and the importance of information regarding mathematics teachers' perspectives on the Merdeka Mengajar Platform, this study aims to explore and describe the perspectives of mathematics teachers about the Merdeka Mengajar Platform (PMM).

2. METODE

This research is a descriptive qualitative study that investigates the experiences of mathematics teachers in utilizing the Merdeka Mengajar platform. A qualitative approach was chosen because this study aims to explore in-depth perspectives, experiences, and interpretations of teachers, which cannot be captured adequately through quantitative data alone. The participants or respondents in this study were 50 mathematics teachers. However, only 28 (56%) of the teachers knew the Platform. Respondents of this study were Mathematics Teachers in West Sulawesi and South Sulawesi. The data collection period started from June to August.

To collect data, we used interviews and observation. We interviewed by first asking about the documentation of the interview, whether it was transcribed directly, audio-recorded, or video-recorded. The interviews used in this research were semi-structured. This means that the interviews were not fully guided by the Interview Guidelines as a supporting instrument. Questions may change or improve based on the responses given by the participants.

The interview guideline is a supporting instrument used in this research. This guideline contains several questions that researchers will ask. The questions asked were about the uses and benefits of using PMM, the shortcomings of PMM, features of PMM, suggestions for PMM, and the implementation of what the teachers have learned in PMM.

The data analysis used in this study followed three main steps: data condensation, data display or presentation, and decision-making (Miles et al., 2020). In Data Condensation, the researcher filters the data by selecting which data should be the main focus to be re-examined. However, the researcher in this case did not discard or delete data that was not the main focus. Researchers keep the data for future comparison purposes because researchers may reuse it when the temporary conclusions obtained are not sufficient. Researchers in this step organized and categorized the responses given by mathematics teachers based on the advantages and disadvantages of using Merdeka Mengajar, suggestions for future improvement,

implementations in their classrooms, and features provided by the platforms. In Data Presentation or Display, researchers present data in the form of transcript tables, or images to compare the responses given by the mathematics teachers interviewed. Based on the results of the comparison, the researcher then concludes. The conclusions obtained may be provisional. In this case, the researcher will re-examine data that is not the main focus or consider collecting data again.

In this study, data validity was obtained using triangulation. The triangulation used was data triangulation by comparing interview results from various research respondents. By comparing data from various respondents, we can obtain more credible data.

3. HASIL DAN PEMBAHASAN

Out of the 50 mathematics teachers asked, only 28 (56%) of the teachers knew the use of Merdeka Mengajar. It means that 22 of the participants did not know the use of the platform. In addition, 13 out of 22 have never heard of the platform. Moreover, of the 28 math teachers who knew, it turned out that 12 teachers very rarely accessed it or even never opened it. This contradicts the findings by (Budiarti, 2022) who showed a percentage above 70% for teachers who frequently access PMM. The low percentage of mathematics teachers who accessed or were aware of this platform does not mean that they never do self-development but that they do it through other platforms.

1. Functions and Benefits of Using PMM

Based on the results of the interview, 28 teachers know the uses or benefits of the Merdeka Mengajar platform. All of them knew that the platform is an application or means for teachers to develop their competence and knowledge in teaching. They also stated that the platform is used as a means to share ideas, experiences, or works related to learning such as best practices and learning tools (such as lesson plans, books, and learning media). Some even uploaded their work and received feedback from other teachers. Others mentioned that the platform allows teachers to obtain certificates as a result of participating in the self-practice, which can be used for promotion or as proof of self-development. The following interview excerpt shows one of the research participant's responses (PX20) on the use of Merdeka Mengajar.

Interviewer : Did you ever hear about the Merdeka Mengajar Platform?

PX20 : Merdeka Mengajar is used to share ideas or learning tools such as teaching modules or lesson plans, learning videos, and learning media so we can give and receive various ideas.

The results of our interviews show that overall, the advantage of this platform is that in addition to increasing knowledge, almost everything that teachers need is available. All information, be it starting from lesson plans (Teaching Modules), teaching materials, books, project modules, the flow of learning objectives, learning outcomes, and even modules and independent training are available and all of this can be used as a reference or inspiration in designing learning. The following is an interview excerpt from one of the respondents (PX24) who answered regarding the advantages of the Merdeka Mengajar platform.

Interviewer : Based on your experience, what is the advantage of using the Merdeka Mengajar Platform?

PX24 : It is very helpful for teachers in developing competencies, understanding the curriculum that is being implemented, inspiring in designing lessons, and helping with administration. In addition, each feature has an explanation, such as the learning objective and assessment. There is an explanation feature so people don't just access the search feature. In assessment too, there is a search feature. So there are many explanations of the features in it, whether it is concepts in education or curriculum, such as the Introduction

to the Merdeka curriculum and training on the implementation of the Merdeka curriculum. Then some things that are downloaded can also be saved, so we do not have to search for them anymore. The point is that almost everything the teacher needs is already here, it's just a matter of willingness and consistency if you want to develop your skills. Oh one more thing, because this application users or participants involve various teachers in all regions of Indonesia, so it greatly broadens their horizons and expands their network for future collaboration.

Based on the interview excerpt, we can see that the Merdeka Mengajar Platform is very useful for teachers because it helps teachers to understand the current curriculum with the presence of features accompanied by explanations in it. Moreover, almost everything that teachers need in teaching is already there. So, with this platform, it now depends on the willingness and motivation of the teachers themselves. The same thing was stated by Defa et al. (2023) that through independent training with PMM, teachers no longer have difficulty finding materials or references to do best practices in class because complete examples are available as well as teaching materials. It remains only how these teachers can utilize PMM well and can implement the results in the classroom or at school. Widiastuti et al. (2023) even argue that PMM is an ineffective self-training program for teachers who do not have independence in learning.

Learning independence is an aspect that is needed by teachers in self-development. An application or self-development platform, including for teachers, will not be effectively used by someone if that person does not have good learning independence. This is shown by Setyawan and Syamsuryawati (2023). Setyawan and Syamsuryawati (2023) showed that teachers who study or do self-development at PMM regularly have a level of understanding of the implementation of the Merdeka curriculum that is above teachers who rarely do self-development.

We also found an interesting response from PX8 that related its benefit to teachers' competence. The following interview excerpt shows PX8 responses.

Interviewer : What are the benefits of such a platform?

PX8 : Opening teachers' insights into the Merdeka curriculum that the independent curriculum is not as complicated as thought

Interviewer : Any other changes?

PX8 : In terms of professional competence with personality competence, I feel that I care more about students and provide the best service according to their needs and interests. In the past, I just taught without paying attention to the needs of students, the important thing is that it is still carried out and runs according to the goals that have been prepared, and the treatment is also different.

Interviewer : What about social and pedagogic?

PX8 : Socially, maybe to fellow teachers it is more visible, since the Merdeka curriculum and PMM, we teachers often discuss, especially in terms of module preparation. As for students, maybe because we as teachers want to know what students feel and need, so I usually do deep talks or write down their feelings as an evaluation and reflection. I think that's a social approach too. Pedagogically, it's more about changing the mindset.

Interviewer : What mindset?

PX8 : It's more about realizing that being a teacher is not only about delivering material but also educating. I have to learn a lot more before teaching and educating students. To deal with students who think critically. Teaching is also not just telling but how to make the material given can be understood and applied in everyday life.

We can see that using these platforms can help math teachers develop all four competencies that teachers should have. This can be seen from the increased care and quality of learning provided to students as well, according to PX8. In addition, the participant (PX8) also become aware that their job is not just to provide material but to educate. The results of this study are supported by several studies which argue that the use of PMM can improve teacher competencies that can help the learning process (Aulia et al., 2023; Defa et al., 2023; Marisana et al., 2023; Ramdani et al., 2022; Suryadi & Hidayati, 2023), including in mathematics learning (Budiarti, 2022). The findings of our study are also supported by the findings of (Susanti et al., 2023; Triscova et al., 2022) who reported that teachers were helped in understanding the implementation of the Merdeka curriculum and were greatly inspired in designing teaching modules and creative content that could support the learning process.

2. Mathematics Teachers' Knowledge of Merdeka Mengajar Features

The interview results show that most teachers use PMM's search feature to find learning tools, assessments, and learning outcomes. Several respondents explain the features of PMM in sufficient detail, as can be seen in the following interview excerpt.

Interviewer : *Speaking of Merdeka Mengajar, what features have you accessed in it?*

PX24 : *So in this platform, there are already very many features.*

First, there is a feature in it to search for teaching tools, we can search for teaching tools based on subjects and classes. This feature consists of modules and teaching materials, books, and project modules. The choice of subjects also varies and the levels also include all types of school.

Second, there is an assessment search feature, so we can search for learning assessments here, similar to the search for teaching tools earlier.

Third, there is also a class AKM, which is divided into Numeracy and Literacy and each is also divided into several sections based on the grade level from grade 1 to 12.

Fourth, there is an explorer feature to search for learning outcomes, learning objectives, and the flow of learning objectives. We can search by education level and subject. It's similar to the previous search feature and its filters.

Fifth, there is also independent training, this independent training supports teachers in developing their competencies. Some are divided by topic and some are divided into three main categories, one of which is designing meaningful learning. Here we can also see the real action of teachers. The real action is the application of teacher learning outcomes obtained during independent training.

Sixth, there is the community, here we can create a community as a sharing place, and the community can invite credible presenters, like holding a small-scale seminar but with certain conditions.

Seventh, there are also inspirational videos and proof of work. It contains videos about the education provided by the government or experts, such as assessments and reflections. If it's proof of work, it's similar to earlier, the real action of the teacher.

Eighth, there are also practice ideas, classes, and updates. I haven't explored and found out about classes. For practice ideas, it's something like that and videos too, either from teachers or education experts, or lecturers. The latest information is news regarding the Merdeka curriculum.

Interviewer : *So complete, which of these features have you used?*

PX24 : *What I haven't used is the class and community features. I'm mostly just a consumer. So I look for references, read, and watch. I don't feel it's appropriate to participate in uploading. I'm afraid my work has many mistakes and is followed by many people. Maybe when I have more experience, I'll try it.*

Regarding the features of PMM, what the respondent said is in line with what Aulia et al. (2023) said regarding the features of PMM. These features range from assessment to proof of work. PX24 even mentioned the news feature.

3. Disadvantage of Using Merdeka Mengajar

Based on our research, teachers mentioned several shortcomings. Some of them are related to the file format. They suggested that the file format should also be available in Word so that teachers can easily customize, modify, and adapt the tools downloaded from PMM. The following interview excerpt with PX1 shows such a response.

Interviewer : *Based on your experience, what were the disadvantages of using Merdeka Mengajar?*

PX1 : *The Word format. If there is a Word file then it is easier to modify the learning lesson.*

Another shortcoming cited by respondents was the need to type articles one by one on the platform or the web. This response can be seen in the following interview excerpt with PX10.

Interviewer : *Based on your experience, what were the disadvantages of using Merdeka Mengajar?*

PX10 : *The disadvantage is that sometimes it is a bit difficult to share articles because they have to be typed one by one even though we have prepared the article in Word but cannot be copied again to the platform.*

Based on PX10's response, teachers often have prepared the writings to be shared, but on the Merdeka Mengajar platform, teachers still have to type one by one, making it difficult for teachers who want to share their articles.

Not only the file format and copy and paste feature, but other shortcomings mentioned by respondents were also related to some materials that were still not available, as stated by PX12 below.

Interviewer : *Based on your experience, what were the disadvantages of using Merdeka Mengajar?*

PX12 : *As for the shortcomings, the last time I opened it, it was still incomplete, sometimes there was material that I was looking for but it wasn't there.*

Regarding the completeness of the material, over time of course the material in PMM will be more complete as more teachers access and share their work.

The PMM application not being available on some types of mobile phones is one of the weaknesses of PMM. PX25 responded that the platform was not yet available on the iPhone so PX25 had to go to the website first to access PMM. The interview excerpt is as follows.

Interviewer : *Based on your experience, what were the disadvantages of using Merdeka Mengajar?*

PX25 : *The disadvantage is that it cannot be accessed on an iPhone phone, you have to use the web, only on Android. If there is an application, it should be easier to access. The application is not yet available on all types of cell phones.*

Other shortcomings of the PMM include the lack of socialization and incomplete files. These shortcomings can be seen in the following two interview quotes with PX17 and PX26.

Interviewer : *Based on your experience, what were the disadvantages of using Merdeka Mengajar?*

PX17 : *Maybe there is still a lack of socialization so there are still many teachers who do not know what it is, what are the benefits, or how to use it because out of more than 3 teachers, the users are only 1.4 million, even the total number of participants who have participated in the training is less than half.*

Interviewer : *Based on your experience, what were the disadvantages of using Merdeka Mengajar?*

PX26 : *Sometimes the learning tools are not all shared. Some accounts share learning tools that when we download and open the file, it turns out that it is only three pages, even though if we pay close attention, it should be 4 or up to 10 pages. That makes it incomplete.*

Interviewer : *Is there more?*

PX26 : *Perhaps the drawback is that it is still not well-socialized.*

We can see that PX26 once encountered an incomplete learning tools file. Therefore, there needs to be a team that verifies that the tools available are of good quality and guaranteed.

Regarding the lack of socialization, the same thing was stated by (Defa et al., 2023; Susanti et al., 2023) that the government's efforts are still considered not optimal in introducing the use of Merdeka Mengajar to educational institutions throughout Indonesia. However, it cannot be denied that socialization or training and counseling related to the Merdeka Mengajar Platform has been carried out in various regions in Indonesia and almost all socialization or training related to this platform has obtained satisfactory results and positive responses. We can find many scientific articles related to this and even In-House training is also often carried out. Some of them were PMM Socialization in Medan (Simangunsong et al., 2023), Socialization in one of the schools in Seluma which showed 80% mastery of the material (Prabowo et al., 2021), Optimization of PMM through training in one of the teacher communities in Pare-Pare (Hasmawaty et al., 2023), PMM training in one of the secondary schools in Kediri (Widiastuti et al., 2023), PMM socialization in one of the elementary schools in Blitar (Sari et al., 2022), PMM training for mathematics teachers in Badung Regency (Sumandya et al., 2022), PMM dissemination in Serang City (Rohimat et al., 2022), and even In-House Training in one of the elementary schools in Samarinda (Ramdani et al., 2022). There are even those that specifically discussed certain features such as the Self-Training Completion Strategy Webinar in Banten (Rohimat & Najarudin, 2022). In addition, there has also been a lot of socialization and introduction or content related to the Merdeka curriculum on social media, both published by academics and the government. Therefore, the role and collaboration between academics, teachers, and the government are needed to maximize the implementation of this Merdeka curriculum, including the Merdeka Mengajar platform.

4. Suggestions for Merdeka Mengajar

The suggestions given for PMM are of course related to shortcomings that need to be corrected. However, there were also some additional suggestions mentioned such as the need for additional modules for self-training or additional features as stated by PX1 below.

Interviewer : *Based on your experience, what are your suggestions after using Merdeka Mengajar?*

PX1 : *They can add collaboration features.*

Interviewer : *What kind of collaboration?*

PX1 : *Collaboration to create learning tools or lesson plans so that teachers can be more independent in making learning tools*

PX1 revealed that PMM also needs to add a live collaboration feature in creating learning tools. This is needed because according to respondents, through this collaboration or live session, teachers can be more independent in creating and developing their learning tools.

Another suggestion put forward by participants was the need for the formation of a team specifically tasked with assessing the work uploaded by teachers and the obligation to create work. This was stated by PX12 and PX26 in the following interview excerpt.

Interviewer : Based on your experience, what are your suggestions after using Merdeka Mengajar?

PX12 : There should be someone assigned to give an assessment, if possible someone who already understands. Because usually in the group some ask for help to give an assessment and we don't really understand, so sometimes we just give a good assessment because we don't know.

Interviewer : Based on your experience, what are your suggestions after using Merdeka Mengajar?

PX26 : The suggestion is to first establish an account that can be accounted for. It is not allowed to create accounts that have no experience in the field of education, especially related to learning tools, such as new teachers can upload tools. If for example, it is wrong, there is no correction from the platform. So if for example, someone corrects the tools, that's good. Anyone can create an account but there is also a special team that corrects what has been made. So that before publishing it is good. If for example like now anyone can. When it is published, it is not known. So if there is a story of a new teacher or fresh graduate who has just entered teaching at school and continues to open a teacher share that there is something wrong followed, it will continue to be wrong. So it should be fixed instead it continues like that. This can also overcome problems related to incomplete learning tools earlier.

Based on the interview excerpt, the team that was formed certainly consists of teachers or experts who understand the ins and outs of the curriculum that is currently being implemented. This verification and assessment is intended so that new teachers or prospective teachers can easily develop competencies and learn the current curriculum. Studying credible and quality-assured sources can certainly prevent the emergence of misconceptions related to the implemented curriculum.

In addition to the need for verifiers and assessors, other suggestions put forward by teachers were the need for an offline version of the existing features and the expansion of access to also allow new teachers, fresh graduates, and education students to access this PMM. These suggestions were made by PX13 and PX24 as shown in the following interview excerpts.

Interviewer : Based on your experience, what are your suggestions after using Merdeka Mengajar?

PX13 : Oh yes and that too, it might be good if more features are added that can be accessed offline and given access options for fresh graduates who do not have an account to be able to access.

Interviewer : Based on your experience, what are your suggestions after using Merdeka Mengajar?

PX24 : It might be good to make an offline version on Android and PC, which of course requires more storage. It would be great if there was an offline version so that teachers in rural areas or with poor network support could also access it. Oh yes, it is also good if fresh graduates in the field of education are given access to this application because it can greatly support them to learn and hone their skills. Not only fresh graduates but also students majoring in Education.

Interviewer : What about the real action or results of the application later for those who have not taught?

PX24 : Can be cooperation between the school and the campus. So it's a kind of internship again which of course is supported by proof of certificates from schools and campuses later. If this is like this, it's good.

Based on the interview excerpt, we can see that an offline version of this platform is needed so that teachers who are stationed or teaching in remote areas or areas with poor internet networks can also access and use it.

In addition to the offline version, another suggestion is to allow new teachers and recent graduates or students from education majors to access PMM. This suggestion can overcome access problems that are only limited to teachers who have a belajar.id account (Budiarti, 2022; Defa et al., 2023; Rohimat et al., 2022). This suggestion is certainly very useful because they will no longer have a headache regarding the activities that will be carried out after graduation. In addition, for students, access to this platform certainly provides an initial overview of how the world of Education is. In fact, for those who are not yet teaching (students and those who have just graduated), PX24 mentioned that campuses and schools can collaborate to hold internship programs that utilize PMM which will be supported by certificates from schools or campuses.

Another suggestion made was the need for someone to supervise and assess the learning outcomes of mathematics teachers at PMM. This response can be seen in the following interview excerpt with PX25.

Interviewer : Do you have any other suggestions?

PX25 : There should be more in-house training for teachers accompanied by supervision and assessment of whether what is obtained and applied is appropriate or not. Because it could be that the results of independent training or teacher perceptions vary regarding what is learned.

PX25 suggested the need for an in-house training with a team to supervise and assess the learning outcomes of mathematics teachers at PMM. This is necessary to prevent misconceptions about the materials that have been learned.

Based on the results of the interviews that have been conducted, we can see that the platform used by this teacher still needs improvement and also development to obtain better self-development results. The suggestions given range from added or improved features to platforms that are also provided on all types of cellphones and the provision of platforms in offline form. This is in line with the statement by (Budiarti, 2022), who stated that Merdeka Mengajar still needs development and updates to provide better services for all users.

5. Implementations in Classroom

Our interview results revealed that most mathematics teachers did not use other teachers' tools immediately. They first analyze and adjust it to the needs of the students and the class. However, only a few of the interviewees gave more detailed examples of the implementation of their PMM learning outcomes in the classroom. PX1 and PX10 were two of them. The following are excerpts from their interviews.

Interviewer : Are there any inspirations from reading or exploring other teachers' tools that have been implemented in the classroom?

PX1 : Yes, there are several, such as alternatives to educational games or learning models. For example, treasure hunting is very popular with students because learning feels like playing.

Interviewer : How did you implement what you have learned in Merdeka Mengajar?

PX10 : The lesson plans that are shared, the media used, the LKS, etc. are very much a reference for making tools that are also adapted to the local

culture around. For example, a learning media is using the Coklak game (in Jawa), this media can be modified to use areca nut if in Papua. Anyway, it adds to the reference and knowledge. The articles shared are also very insightful.

We can see that PX1 implemented fun learning for students by adapting the concept of a treasure hunt. As for PX10, he gave an example related to the adaptation of one of the tools he saw in PMM that used media derived from traditional Javanese games. In this case, PX10 adapted it by using traditional games in the Papua region. This finding is supported by Budiarti's research which shows that PMM can provide inspiration and innovation for mathematics teachers to implement in the classroom.

In addition to using cultural contexts and games, there is also one mathematics teacher, PX8, who began to adapt to using differentiated learning after using PMM. The following is an excerpt from his interview.

Interviewer : How did you implement what you have learned in Merdeka Mengajar?

PX8 : For example, if we make learning tools according to procedures by applying models, and approaches, but in the application sometimes we go back to the initial setting, namely lectures. Now after learning a lot at PMM, we have begun to apply differentiated learning where this is tailored to the needs and interests of students. And there are so many examples of this at PMM. So it can be an inspiration for us too. Where teachers used to prioritize final grades as a benchmark for writing report cards, now they no longer do because of the various explanations prepared by the Ministry of Education and Culture at PMM.

Based on the interview excerpt, through the use of PMM, PX8 began to learn to use and implement differentiated learning tailored to students' needs and interests. This shows that optimizing the use of PMM can help mathematics teachers in implementing the teaching and learning process in the classroom. The same thing was mentioned by (Setiariny, 2023) who stated that the utilization of PMM can improve the quality of learning gradually.

A similar response was explained by PX27 but she gave a more detailed explanation of what was done in class, as follows.

Interviewer : Did you still remember the implementation of what you have learned in PMM?

PX27 : So the material at that time in grade nine was about congruence and symmetry. I tried to make a PowerPoint that started directly with the application of the concept in everyday life. I added some photos of classroom windows, the height and shadow of tall buildings, some collections of markers, tiles, and so on. With that, I usually ask the students what things you can observe from the pictures, and various questions to make the students think before discussing the material. Some begin to connect their understanding. But after that, various questions are discussed one by one during the discussion, until the connection between the pictures at the beginning and the material is discussed. This is how I implement it in class. Because I didn't explain the material at that time, I used Problem-Based Learning. So students presented their work in class.

I make student worksheets, then some steps lead to the conclusion of the concept. So some students say hmmm, teacher, pushing the table is an

example of translation, and so on. So it's a kind of language that is easier to remember.

Based on the interview excerpt, we can see that what PX27 has learned about student-centered learning is starting to be applied in her classroom, and in this example, PX27 teaches geometry. The quote also mentions that some students are starting to understand how examples of these concepts in the real world.

During one of our interviews, we also found interesting findings. PX15 shows the implementation of what she has learned in PMM, especially in the assessment topic. The following Figure 1 shows an example of a non-cognitive diagnostic assessment that she developed. PX15 also attached a link to the assessment, which is <https://bit.ly/AsesmenNonKonitifForParents>. This finding is in line with the results of research by (Aritonang et al., 2023) which states that PMM has positive benefits in helping educators carry out assessments because in PMM itself various kinds of assessments can be used as references.

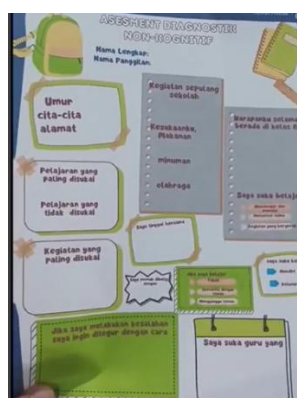


Figure 1. Non-cognitive diagnostic assessment sheet created by PX15

PX15 did not just share the example of her works in assessment. She also showed the following Figure 2.



Figure 2. Curriculum Implementation Workshop where PX15 was The Presenter

Figure 2 shows that PX15's learning outcomes are not only for herself but also shared with others. This is evident from her real action where she collaborated with several teachers to hold workshops related to the implementation of the Merdeka curriculum in one of the elementary schools in Makassar.

Regarding the implementation of mathematics teachers' learning outcomes in the classroom, especially those that provide specific examples, we can see that PMM helps teachers in providing quality mathematics learning. This finding is supported by the (Budiarti, 2022) opinion that the features contained in PMM help mathematics teachers in providing various

information, references, inspiration, and innovation in providing quality and fun mathematics learning according to the student's ability.

4. KESIMPULAN

Based on the results of the research conducted, the following conclusions were drawn.

1. Mathematics teachers consider PMM as a place to learn about the Merdeka curriculum and share learning tools. The benefits of PMM according to teachers are to develop teacher competencies and inspire teachers in planning lessons.
2. The shortcomings of PMM cited by mathematics teachers were limited file formats, lack of socialization, incomplete files, and platforms that are not available on all types of mobile phones.
3. Suggestions made by mathematics teachers varied, ranging from the need for a verification and assessment team for the tools to the expansion of PMM account access to allow students majoring in education and fresh graduates majoring in education to also use PMM.
4. As for the features, most teachers use the search feature for learning tools, assessments, and learning outcomes.
5. The implementation of learning outcomes in PMM in the classroom by mathematics teachers consists of the use of game elements and traditional games, the implementation of contextual and student-centered learning, curriculum workshop, and diagnostic assessment.

Other researchers who are interested in the topic of PMM can explore certain features of PMM and discuss them in greater detail and depth. Other possible options include exploring other self-development platforms or making a comparison of available teacher self-development platforms. For the government, the results of this study can be used as a reference in optimizing PMM in the future. Teachers can use the results of this study as a reference, especially regarding the implementation and benefits of PMM.

5. DAFTAR PUSTAKA

- A, Y. E., & Sihotang, H. (2021). Penerapan Sistem Prodigy Math Game sebagai Implementasi Merdeka Belajar dalam Meningkatkan Minat Belajar Siswa Menengah Atas. *EDUKATIF: JURNAL ILMU PENDIDIKAN*, 3(6), 3919–3927.
- Ambarwati, F. N. (2019). Meningkatkan Pengembangan Diri Guru Pendidikan Agama Islam (PAI) Sebagai Implementasi Teori Dinamis-Progresif di Sekolah Dasar. *Edudeena: Journal of Islamic Religious Education*, 3(2), 91–99.
- Andriani, A., Hidayati, A. N., Abdullah, F., Rosmala, D., & Supriyono, Y. (2022). Menulis sebagai Refleksi Pengembangan Diri dan Profesionalisme Guru. *E-Dimas: Jurnal Pengabdian Kepada Masyarakat*, 13(4), 692–698.
- Aritonang, F., Al Aziz, I. S. A., & Suwandi, S. (2023). Utilization of Assessment Features in Platform Merdeka Mengajar (PMM) in the Assessment of Indonesian Language Learning. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, 8(2), 134–141.
- Aulia, D., Murni, I., & Desyandri, D. (2023). Peningkatan Kompetensi Guru Sekolah Dasar melalui Platform Merdeka Mengajar (PMM). *Jurnal Ilmiah Profesi Pendidikan*, 8(1b), 800–807.
- Budiarti, N. I. (2022). Merdeka Mengajar Platform as A Support for The Quality of Mathematics Learning in East Java. *Matematika Dan Pembelajaran*, 10(1), 13–25.
- Defa, D., Lasmawan, I. W., & Suastra, I. W. (2023). Analisis Pemanfaatan Platform Merdeka Belajar (PMM) oleh Guru Penggerak di Kecamatan Rantau Selatan Kabupaten Labuhanbatu

- dalam Implementasi Kurikulum Merdeka. *Pendas : Jurnal Ilmiah Pendidikan Dasar*, 8(1), 5776–5787.
- Hasmawaty, H., Muliati, M., & Bachtiar, M. Y. (2023). Optimalisasi Aplikasi Platform Merdeka Mengajar (PMM) Melalui Komunitas Belajar Gugus Paud. *Madaniya*, 4(2), 574–581.
- Hollebrands, K. F., & Lee, H. S. (2020). Effective design of massive open online courses for mathematics teachers to support their professional learning. *ZDM*, 52(5), 859–875.
- Ikram, F. Z., & Rosidah, R. (2023). Kombinasi WhatsApp dan Google Classroom dalam Pembelajaran Matematika Mata Kuliah Aljabar Elementer. *Issues in Mathematics Education*, 7(1), 60–70.
- Jawahir, A., & Yusuf, I. (2021). Guru Belajar dan Berbagi Platform and Users' Responses in The Context of Teacher Professional Development. *SCIENTIA: Social Sciences & Humanities*, 1, 423–431.
- Kartomo, A. I., & Slameto, S. (2016). Evaluasi Kinerja Guru Bersertifikasi. *Kelola: Jurnal Manajemen Pendidikan*, 3(2), 219.
- König, J., Blömeke, S., Jentsch, A., Schlesinger, L., Née Nehls, C. F., Musekamp, F., & Kaiser, G. (2021). The links between pedagogical competence, instructional quality, and mathematics achievement in the lower secondary classroom. *Educational Studies in Mathematics*, 107(1), 189–212.
- Lestari, K. P., Hendarman, H., & Hidayat, R. (2022). Peningkatan Produktivitas Kerja Guru Melalui Pengembangan Efikasi Diri Dan Kepemimpinan Visioner. *Jurnal Manajemen Pendidikan*, 10(1), 037–042.
- Mamoh, O., & Bete, H. (2019). Pengembangan Diri Guru-Guru Matematika Se-Kabupaten Ttu Melalui Kegiatan Bimtek Penulisan Proposal Dan Artikel Ilmiah. *Bakti Cendana*, 2(2), 49–57.
- Marisana, D., Iskandar, S., & Kurniawan, D. T. (2023). Penggunaan Platform Merdeka Mengajar untuk Meningkatkan Kompetensi Guru di Sekolah Dasar. *Jurnal Basicedu*, 7(1), 139–150.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2020). *Qualitative data analysis: A methods sourcebook* (Fourth edition). SAGE.
- Ni Putu, E. A., Bagus Putu Arnyana, I., Nyoman Dantes, I., & Hendra Wirawan, I. P. (2023). “Santi Sarma” Implementasi Kebijakan Penggunaan Platform Merdeka Mengajar Menuju Guru Produktif dan Inovatif. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 8(1), 196–209.
- Nuryanti, T., Abdullah, G., & Murniati, N. A. N. (2022). Pengaruh Pengembangan Diri Terhadap Kualitas Mengajar Guru Pendidikan Anak Usia Dini. *Jurnal Prakarsa Paedagogia*, 5(1), 12–21.
- Pepin, B., Xu, B., Trouche, L., & Wang, C. (2017). Developing a deeper understanding of mathematics teaching expertise: An examination of three Chinese mathematics teachers' resource systems as windows into their work and expertise. *Educational Studies in Mathematics*, 94(3), 257–274. <https://doi.org/10.1007/s10649-016-9727-2>
- Prabowo, D. A., Fathoni, M. Y., Toyib, R., & Sunardi, D. (2021). Sosialisasi Aplikasi Merdeka Mengajar dan Pengisian Konten Pembelajaran pada SMKN 3 Seluma untuk Mendukung Program SMK-PK Tahun 2021. *Jurnal Pengabdian Masyarakat Teknologi Terbarukan*, 1(2), 55–60.
- Ramdani, M., Yuliyanti, S. Y., Rahmatulloh, I. T., & Suratman, S. (2022). Penggunaan Platform Merdeka Mengajar (PMM) pada Guru Sekolah Dasar. *Journal of Instructional and Development Researches*, 2(6), 248–254. <https://doi.org/10.53621/jider.v2i6.201>
- Rohimat, S., & Najarudin, N. (2022). Webinar Strategi Penyelesaian Pelatihan Mandiri Kurikulum Merdeka Pada Platform Merdeka Mengajar. *Jurnal Abdimas Kartika Wijayakusuma*, 3(2), 1.
- Rohimat, S., Sanusi, S., & Munthahanah, M. (2022). Diseminasi Platform Merdeka Mengajar untuk Guru SMA Negeri 6 Kota Serang. *ABDIKARYA: Jurnal Pengabdian Dan Pemberdayaan Masyarakat*, 4(2), 1–9.

- Safruddin, S., Suaedi, S., & Ilyas, M. (2020). Pengaruh Sikap Professional dan Persepsi Guru Tentang Kegiatan Pengembangan Diri Terhadap Kinerja Guru Matematika SMA. *Proximal: Jurnal Penelitian Matematika Dan Pendidikan Matematika*, 3(1), 37–46.
- Sari, A. S. L. S., Pramesti, C., Suryanti, S., & S., R. S. R. (2022). Sosialisasi Platform Merdeka Mengajar Sebagai Wadah Belajar dan Berkreasi Guru. *Jurnal Penamas Adi Buana*, 6(1), 63–72.
- Sennen, E. (2020). Pengembangan Mutu Diri Guru. *Jurnal Inovasi Pendidikan Dasar*, 1(1), 101–114.
- Setiaryny, E. (2023). Pemanfaatan Platform Merdeka Mengajar Sebagai Upaya Meningkatkan Kualitas Pembelajaran. *Jurnal Lingkar Mutu Pendidikan*, 20(1), 23–33.
- Setyawan, D., & Syamsuryawati, S. (2023). Analisis Penggunaan Aplikasi Merdeka Mengajar Terhadap Pemahaman Guru Terkait Implementasi Kurikulum Merdeka. *Prima Magistra: Jurnal Ilmiah Kependidikan*, 4(3), 428–436.
- Simangunsong, A. D., Manihuruk, M. F., Sauduran, G. N., Siahaan, S. T., & Lastri, L. (2023). Sosialisasi Implementasi Kurikulum Merdeka Berdasarkan Pengenalan Platform Merdeka Mengajar. *Jurnal Nusantara Berbakti*, 1(1), 80–87.
- Sumandya, I. W., Widayani, N. L. M. M., & Nugraha, I. N. B. S. (2022). PKM. Komunitas Belajar Guru Matematika Kabupaten Badung dalam Pelatihan Pemanfaatan Platfom Merdeka Mengajar.
- Suryadi, R., & Hidayati, D. (2023). Utilizing Merdeka Mengajar Platform at SMP Muhammadiyah Bandung. *Intiqad: Jurnal Agama Dan Pendidikan Islam*, 15(1), 167–176.
- Susanti, H., Fadriati, F., & B.S, I. A. (2023). Problematika Implementasi Kurikulum Merdeka di SMP Negeri 5 Padang Panjang. *ALSYS*, 3(1), 54–65.
- Triscova, V., Rahma, F. A., & Nurlillahi, A. A. (2022). Persepsi Guru Sekolah Dasar dalam Pemanfaatan Platform Merdeka Mengajar. *Aksara: Jurnal Ilmiah Pendidikan Bahasa Dan Sastra Indonesia, Edisi Khusus: Seminar Nasional Bulan Bahasa FKIP Unbari Ke-1*, 75–82.
- Widiastuti, S., S. Bachri, B., & Y. Maureen, I. (2023). The New World Kirkpatrick Model (NWKM) pada Pelatihan Mandiri Implementasi Kurikulum Merdeka (IKM) Melalui Platform Merdeka Mengajar (PMM). *Jurnal Ilmiah Mandala Education*, 9(2).