

## Implementation of the online teacher competency improvement training program in the diklat.co semarang learning community

Haris Pribadi\* , Deni Hardianto 

Educational Technology, Yogyakarta State University

Jl. Colombo No. 1, Karang Malang, Caturtunggal, Depok District, Sleman Regency, Special Region of Yogyakarta 55281, Indonesia

\*Corresponding author, e-mail: [harispribadi.2023@student.uny.ac.id](mailto:harispribadi.2023@student.uny.ac.id)

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### ABSTRACT

This study aimed to describe the process and impact of online teacher competency improvement training through the Diklat.co platform in supporting the implementation of the *Kurikulum Merdeka* (Freedom Curriculum). This research employed a qualitative approach with a case study method. The data were collected through observations, interviews, and documentation of the training implementation. The findings indicate that online-based training effectively enhances teachers' pedagogical and professional competencies. This occurs through reflective discussions, sharing of best practices, and the use of technology in the learning process. The participants reported increased confidence in applying differentiated instruction and diagnostic assessments following the training. However, challenges remain, including limited infrastructure, varying levels of digital literacy, and scheduling constraints that overlap with teachers' existing workloads. This study recommends the online-based training model as a flexible, collaborative, and relevant alternative to support teacher professionalism development in the digital era.

### INTRODUCTION

Education is the primary foundation for national development, and teachers are central actors in its implementation. The quality of education is greatly influenced by teacher competence, encompassing pedagogical, professional, social, and personal aspects. In the context of a continuously evolving curriculum and increasingly complex challenges, improving teacher competence is a pressing need. The importance of teacher competence in supporting educational quality is also emphasised ([Darling-Hammond et al., 2017](#); [Avalos, 2011](#)), stating that teacher professionalism directly contributes to student learning outcomes. The Indonesian government, through the Ministry of Education, Culture, Research, and Technology, has implemented various policies to address this challenge, one of which is the development of the *Merdeka Mengajar* (Freedom to Teach) Platform (henceforth, PMM). This platform aims to encourage teachers to be more active in independent learning and self-development in accordance with the principles of *Merdeka Belajar*.

However, data from the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) in 2023 shows that teacher participation in independent training through PMM remains relatively low. Barriers include limited time, lack of motivation, limited access to training tailored to their needs, and a lack of support within the learning community. This situation is similar to findings (Kyndt et al., 2016), which identified that teacher professional learning is often hampered by workload, motivation, and institutional support. This indicates the need for alternative strategies to support teacher learning in a sustainable and structured manner.

One potential approach is the development of online community-based learning training, as implemented by the Diklat.co platform. Diklat.co is an online training provider organising teacher competency improvement activities through digital platform-based learning communities. Studies (Lantz-Andersson et al., 2018; Trust et al., 2016) also highlight that online teacher communities can strengthen professional identity and increase confidence in implementing new practices. Through this program, teachers not only receive training materials but also engage in discussions, share good practices, and receive constructive feedback within the peer community. This approach is expected to bridge the gap between the need for teacher competency development and the challenges of implementing conventional training.

The problem of low teacher competency and the suboptimal utilisation of PMM in competency improvement requires serious attention. This is where this research is crucial. This supports findings (Opfer & Pedder, 2011) that teacher professional development requires planned interventions based on real problems. This study aims to explore and analyse how community-based learning training facilitated by Diklat.co can be an effective solution to support teacher competency improvement. The use of technology for online learning is not new, but interactive, sustainable, and relevant community-based learning models for teachers' work contexts have not been extensively researched, particularly in their integration with PMM.

This research is significant because it examines the effectiveness of online training not only from the perspective of content or delivery, but also from the perspective of the dynamics of the learning community and its impact on changes in teachers' teaching practices in the field. This supports the view (Philipsen et al., 2019) that highlights the importance of the social dimension and reflection in technology-based teacher training. Furthermore, this research also makes a significant contribution to the development of more adaptive and sustainable teacher training policies.

Several previous studies have examined online-based teacher training. Research from Haris et al. (2020) shows that online-based training Learning Management System can improve teachers' pedagogical knowledge, but the challenge is the lack of interaction between participants. Meanwhile, another study Sari & Wulandari (2021) found that community-based learning can increase trainee engagement, but their studies are still limited to informal communities and not systematically structured on digital platforms. Furthermore, a study (Susanto, 2022) concluded that teacher training through PMM is asynchronous and self-paced, which is suitable for teachers' time flexibility, but often does not provide adequate discussion and collaboration spaces. Another study (Lestari, 2023) highlighted that teachers need peer support in understanding and implementing training materials, especially in the context of differentiated learning and diagnostic assessment, which are the primary focus of the Independent Curriculum. The emphasis on online collaboration is also found in international studies (Tondeur et al., 2017; Deng et al., 2022), which show that online forums effectively facilitate teacher reflective discussions.

While previous training models have many advantages—including flexibility in time and broad reach, most training emphasises one-way delivery of material and has not optimally integrated collaborative elements. Kennedy (2016) also highlighted that teacher training without follow-up tends to have a limited impact on teaching practice. The main limitations of previous training models are the lack of participant involvement in active discussions, the lack of personalisation of materials to teachers' needs, and the absence of direct mentoring during the training process. Furthermore, many trainings do not include a systematic reflection and follow-up process, making changes in teacher competency after training difficult to measure. The lack of integration between training and field practice causes training to be merely a formality without a significant impact on improving the quality of teaching in the classroom.

This research focuses on analysing the implementation of community-based teacher competency improvement training through the Diklat.co platform integrated with the PMM (Public Relations and Community Empowerment Program). This aligns with the community of practice model (Wenger, 1998), which accentuates the importance of social interaction and collective learning in improving professional competence. The novelty of this research lies in the training approach, which combines online learning, the formation of a learning community, and the use of PMM features to support reflective and collaborative practice. Unlike conventional online training, the model studied integrates discussion forums, facilitators' feedback, and hands-on practice through context-based assignments for teachers. Another advantage of this approach is the use of tiered and adaptive training tailored to the profile and needs of each teacher. This study also assesses the impact of the training on teachers' ability to implement the Independent Curriculum, particularly in the aspects of differentiated learning and assessment.

The theoretical framework used in this study draws on Vygotsky's social learning theory, which emphasises the importance of social interaction and the role of communities in the learning process. In the context of teacher training, learning communities serve as a vehicle for teachers to collectively construct knowledge, exchange experiences, and gain support from colleagues and facilitators. Furthermore, this study adopts the Community of Practice (Wenger, 1998) model, emphasising the importance of active participation, shared practice, and the development of professional identity within a community. In a community-based training, as organised by Diklat.co, interaction between community members and the sharing of good practices are key drivers of improving professional competence. Conceptually, this research also refers to the andragogical learning approach (Knowles, 1984), where adult (teacher) learning needs to be based on their own experiences and is problem-based, and relevant to their practical needs.

This study aims to analyse how community-based teacher competency improvement training conducted by Diklat.co can support the implementation of the *Merdeka* (Freedom) Curriculum through the use of the PMM. Specifically, this study aims to:

1. Examining the role of learning communities in supporting online teacher learning.
2. Assessing the impact of training on teachers' understanding and practice in differentiated learning and diagnostic assessment.
3. Identifying challenges and opportunities of a community-based training model integrated with PMM.

The primary contribution of this research is to provide an empirical overview of the effectiveness of online community-based training models in sustainably improving teacher competency. It also offers alternative training designs relevant to today's teacher needs, and policy recommendations for training providers and the government in developing more adaptive, collaborative, and impactful teacher professional development programs.

## METHOD

This research employed a descriptive qualitative approach with a case study design. This approach was chosen because it allowed the researchers to delve deeply into the phenomena that occurred during the implementation of online teacher competency improvement training through the Diklat.co learning community within the PMM. The case study design holistically examined the context of the training implementation, the strategies used, the program's effectiveness, and participants' responses.

The research subjects consisted of training organisers, instructors, and teacher training participants who were members of the Diklat.co learning community. Subject selection was carried out randomly purposively, taking into account their direct involvement in the training process and their contribution to relevant data.

The main instrument in this research is the researchers themselves (*human instrument*), as is common in qualitative research. In addition, the researchers used semi-structured interview guidelines, observation sheets, documentation, and data collection results. This study developed the instrument grids to ensure that the data collected aligns with the research focus and can answer the problem formulation. The interview grid covers aspects of training planning (objectives, materials, strategies), implementation (learning process, community interaction),

evaluation (pretest, posttest, reflection), as well as supporting and inhibiting factors. The observation grid aimed at recording the dynamics of participant interactions within the learning community, activities in discussion forums, and facilitator involvement. In addition, the document analysis grid focused on training modules, teaching materials, participant assignment results, and evaluation reports. The researcher also compiled a posttest grid that contains teacher pedagogical and professional competency indicators relevant to the material presented in the training. Instrument validity was maintained through data triangulation and member checking to confirm the findings.

Data collection was conducted in three main stages. First, the pre-field phase, which included determining the research location and subjects, as well as developing instruments. Second, the field implementation phase, which included in-depth interviews with key informants (organizers, instructors, and participants), direct observation of the training implementation, and the collection of training documents such as modules, teaching materials, and evaluation results. Third, the post-field phase, which involved transcription, data rechecking, and compiling initial findings.

Data were analysed using an interactive model from Miles and Huberman, which consists of three main components: data reduction, data presentation, and conclusion drawing/verification. Data reduction sorted relevant data according to the research focus. Data presentation was through descriptive narratives, tables, and schematic visualisations. Conclusions were drawn in stages, tentative, and strengthened by verification from data sources. To support data validity, this study used source and triangulation techniques, member checks, and audit trails for the analysis process. The visualisation of the analysis process was presented in a thematic scheme to show the interrelationships between categories of findings and strengthen the conceptual interpretation of the data. The grid of the research instruments used is shown in [Table 1](#).

**Table 1. Research instrumen grids**

No	Instrument	Measured aspects	Indicator	Data collection techniques
1	Interview	Training planning Implementation of training Training evaluation	Objectives, materials, training strategies Learning process, community interaction Reflection, benefits, obstacles	Semi-structured interviews
2	Observation	Participant activities in training	Forum discussions, collaboration, facilitator involvement	Direct observation
3	Documentation	Training support documents	Modules, teaching materials, assignment results, evaluation reports	Document study
4	Posttest	Improving teacher competency	Pedagogical and professional understanding (Basic Competency of the <i>Merdeka Curriculum</i> )	Written test

## RESULTS

This study aims to describe and analyse the planning, implementation, evaluation, and inhibiting and supporting factors for teacher competency improvement training through online learning communities, specifically using the Diklat.co platform integrated into the PMM. Key findings from the field indicate that community-based *online training* is an effective means of improving teacher competence, although several challenges need to be overcome.

### Training program planning

The training planning was initiated by the organisers, Diklat.co, based on the need for teachers to continuously improve their professional and pedagogical competencies following the demands of the Independent Curriculum. The planning was through internal coordination with the development team and then expanded with input from education practitioners. The Diklat.co platform can be seen in the [Figure 1](#).



Figure 1. Diklat.co platform page

A key finding was that the training planning considers the availability of materials based on the actual needs of teachers in the field. The materials developed align with the characteristics of the Independent Curriculum, such as differentiated learning, Pancasila student profiles, diagnostic assessments, and the implementation of activity-based projects. The planning also considers flexible, online-based training methods to ensure accessibility for teachers from various regions. The Diklat.co platform provides a Learning Management System that allows participants to learn asynchronously, which accommodates teachers' time constraints due to daily school workloads. Furthermore, resource persons are from certified *Merdeka Mengajar* (Freedom to Teach) facilitators or those with experience as training resource persons.

### Implementation of training program

Based on the results of a preliminary study conducted by the researchers at Diklat.co, the online-based training has been going well so far. This claim is evident by the broad reach of the status and regions of the training participants and the considerable enthusiasm of educators for the online-based training program held by Diklat.co (see Table 2 and 3). In addition, Diklat.co differs from other training providers that only focus on specific competencies and levels. Diklat.co provides varied training, so educators can choose training that suits their required competencies.

More interestingly, at the end of each training, participants are not only asked to practice, but are also followed up by the organiser with further guidance until they understand and are competent in the implementation. The main difference between training held by PMM and Diklat.co lies in the provision of post-training mentoring; training at Diklat.co provides further mentoring for participants to implement the training results in their respective assignments, while training at PMM does not offer mentoring sessions after the training. The following table depicts the distribution of online training participants at Diklat.co, based on training participant status and the area of origin of the training participants.

The training was conducted online, including several key stages: participant orientation, material delivery, interactive discussions in the community forum, and reflection assignments. Participants were to complete training modules, interact through the community learning forum, and upload learning reflections as a form of formative assessment. The training emphasised a participatory approach, where teachers were not merely recipients of information but also active learners. They were able to discuss and share good practices with their peers. This collaborative learning is a hallmark of the Diklat.co learning community, strengthening the teacher professional network. One indicator of the training's success was the high teacher enthusiasm in completing the training modules. The high level of participation was evident in the number of teachers who completed the training thoroughly and actively participated in online discussions. However,

several technical challenges occurred, including unstable internet access, especially in remote areas. Furthermore, some teachers found it challenging to manage their time due to the online face-to-face training that still requires a significant time commitment.

**Table 2. Distribution of regions of origin of the online training participants by Diklat.co**

No	Region of origin	Number of participants
1	Java	199
2	Sumatra	98
3	Kalimantan	35
4	Sulawesi	23
5	Jambi	9
6	West Nusa Tenggara	8
7	Bali	7
8	East Nusa Tenggara	4
9	Papua	3
10	Maluku	2
11	West Papua	1
12	Central Papua	1

**Table 3. Distribution of origin status of the online training participants by Diklat.co**

No	Status	Number of participants
1	Elementary school/Equivalent teachers	186
2	Junior high school/Islamic junior high school teachers	101
3	High school/Vocational high school/Islamic high school/Equivalent teachers	79
4	Kindergarten/Early childhood education teachers	8
5	Lecturers	7
6	Special needs school teachers	3
7	Headmasters	2
8	General	2
9	School supervisors	1
10	Students	1

### Training program evaluation

Training evaluation takes two forms: formative evaluation, conducted during the training process; and summative assessment, conducted after the training is completed. Formative evaluation evaluates participant activity in the LMS, their participation in discussions, and their completion of reflective assignments. Summative evaluation uses participant satisfaction surveys and the pretest and posttest *results* to measure competency improvement. Evaluation results showed an increase in teachers' knowledge and understanding of the concepts in the Independent Curriculum. Most participants stated that the training provided immediate benefits in their teaching practice. Many teachers felt more confident in developing teaching modules, implementing differentiated learning, and developing diagnostic assessments after the training. However, findings also indicated that not all teachers optimally internalised all the material in the relatively short training period. This underscores the need for further training or more intensive mentoring after the training.

Table 4 show a significant increase in teacher competence in pedagogical and professional aspects after participating in the online teacher competence improvement training at the Diklat.co learning community.

**Table 4. Results of the pretest and posttest scores**

Competency aspects	Pretest average	Posttest average	Ascension
Pedagogical	60	80	+20
Professional	65	85	+20

### **Supporting factors for training programs**

Flexible access is one factor supporting the success of this training program. Online training allows teachers from various regions to participate without being physically present, thus reducing geographical barriers. Furthermore, community support plays a crucial role in supporting the program. Discussion forums and learning communities strengthen teachers' motivation to learn together and complete the training. The availability of relevant materials is also a contributing factor. Contextual and practice-based training materials make the training more applicable. Finally, school support is crucial. Several principals and supervisors have provided full support to ensure teachers' successful participation in the training, including time dispensations or supporting facilities.

### **Inhibiting factors of training programs**

Limited technological infrastructure hampered the training. Unstable internet connections in remote areas were a major obstacle hindering the training's smooth running. Some participants had difficulty accessing modules or participating in online discussion sessions. Furthermore, the limited time also impacted the training program. Teachers have a busy workload, making it difficult to set aside dedicated time to complete training, especially when it is asynchronous online. However, it still requires time discipline. The final inhibiting factor relates to the digital literacy skills of the training participants. Not all teachers have adequate information technology skills to access the learning management system and actively participate in community forums.

## **DISCUSSION**

Research findings indicate that online learning community-based teacher competency improvement training through the Diklat.co platform positively contributes to teacher professional development, particularly in implementing the Independent Curriculum. These results support previous findings emphasising the importance of relevant, flexible, and community-based training in supporting teacher professionalism in the digital era (Zhao & Frank, 2003; Louws et al., 2017).

Training planning based on teacher needs and the context of the Independent Curriculum demonstrates a needs-based approach that is proven effective. This model matches the adult learning or andragogy theory (Knowles, 1984), emphasising the importance of relevance and context in adult learning. These findings support a study (Avalos, 2011) which stated that effective teacher training addresses the practical needs of teachers in the classroom. However, the training planning in this study did not fully accommodate the varied backgrounds and technological readiness of teachers. This contrasts with the findings (Darling-Hammond et al., 2017), which stated that teacher training must take into account participants' initial readiness to achieve optimal results.

A training approach that utilises community discussion forums and reflective assignments supports the collaborative learning practices that are the characteristics of professional learning communities. This claim is supported by research (Vescio, Ross, & Adams, 2008), which confirms that collaborative learning among teachers improves teaching quality and student learning outcomes. Participants' enthusiasm in completing the training demonstrates the success of participatory strategies. This argument is consistent with a study (Desimone & Garet, 2015), which emphasised that active and collaborative training significantly impacts changing teaching practices. However, time constraints and teacher workloads are key barriers that need to be addressed with student-based training strategies, micro-learning, or a more flexible modular format (Philipsen et al., 2019).

Evaluations through pretests and posttests showed increased participant competency, supporting previous findings that online training can enhance teachers' professional competence (Trust & Whalen, 2020). Participant reflections also reflected internalisation of the material, in line with the concept of metacognition in adult learning, which enhances training effectiveness (Schraw & Dennison, 1994). However, the limited training time hindered the comprehensive internalisation of the material. This view is similar to findings (Kennedy, 2016), who stated that training that is too short tends to have a limited impact. Therefore, developing a sustainable training scheme and post-training mentoring mechanisms is urgent.

Flexible access and community support were two key contributing factors to the success of this training. This view aligns with the principles of social constructivism-based e-learning, where the learning process is interactive and influenced by social interaction (Vygotsky, 1978). In teacher training, support from colleagues and principals reinforced continued participation, supporting previous findings (Opfer & Pedder, 2011). Meanwhile, technological limitations and low digital literacy among participants were significant barriers. This reinforces research (Koehler et al., 2013) that concluded that the successful implementation of ICT-based training is highly dependent on the readiness of the infrastructure and the digital capacity of participants. Therefore, a strategy for improving digital literacy is urgent as part of the training design.

Furthermore, the findings of this study align with various international studies that demonstrate the importance of designing a relevant, collaborative, and technology-based teacher training. Darling-Hammond et al. (2017) and Desimone & Garet (2015) emphasises that effective training needs to be sustainable, practice-based, and contextual. This is reinforced by a study Avalos (2011), which found that teacher training is most impactful when it targets real classroom needs. In the context of online learning, studies from Philipson et al., (2019) and Trust & Whalen, (2020) show that technology integration allows teachers to access more flexible training, although it requires the support of a learning community structure to maximise its benefits (Koehler & Mishra, 2009; Tondeur et al., 2017).

Trust et al. (2016) and Lantz-Andersson et al. (2018) found that professional learning networks and online communities can strengthen teachers' confidence in implementing innovative methods. Kyndt et al. (2016) mapped that informal learning in digital communities significantly improves pedagogical competence. Kohnke & Zou, (2021) and Kohnke & Foug, (2023) underscore the effectiveness of microlearning in the context of limited teacher time. Deng et al. (2022) even highlighted the importance of reflective discussions among teachers in online communities to build collective knowledge. In the dimension of teaching practice, studies from Louws et al. (2017) and Opfer & Pedder (2011) show that teachers' learning needs often arise from real-life classroom problems, which are effectively addressed through forums for sharing good practices. Vescio et al. (2008) and Zhao & Frank (2003) add that collaborative learning within communities improves teaching quality and student learning outcomes. Peer and principal support has also been shown to influence the success of training, as demonstrated (Kennedy, 2016).

Adult learning theory from Knowles (1984) and Schraw & Dennison (1994) emphasised that reflection and problem-solving processes are relevant for adult teachers. Teachers also need in-depth discussions to understand differentiated learning and the need for collaborative spaces within the PMM. Within the framework of educational technology, studies from Lantz-Andersson et al. (2018); Koehler & Mishra (2009) and Tondeur et al. (2017) show that learning platform design plays a critical role in ensuring the success of online training. Meanwhile, Trust et al. (2016); Philipson et al. (2019) and Darling-Hammond et al. (2017) repeatedly underline the need for design strategies that combine collaboration, reflection, and hands-on practice. This view strengthens the findings of this study that Diklat.co training, which integrates community forums, reflective discussions, and the application of differentiated modules, can be an effective alternative in supporting the implementation of the Independent Curriculum.

In general, the findings of this study align with global trends showing a shift in teacher training from conventional approaches to technology-based and community-based learning (Trust et al., 2016; Lantz-Andersson et al., 2018). Platforms like Diklat.co present a new alternative in the context of teacher professional development in Indonesia, which is geographically dispersed and has diverse technological backgrounds. However, compared to similar studies conducted in developed countries, the implementation of training in Indonesia faces fundamental challenges in terms of infrastructure and supporting policies. For example, in a study from Kyndt et al. (2016), teacher training in Finland or the Netherlands received full support from the national education system, including dedicated time in teachers' work schedules, unlike in Indonesia.

These findings have vital implications for the development of educational science and professional practice. First, strengthening ongoing training policies that focus not only on content

but also on technical and psychosocial support for teachers is a need. Second, enhancing digital competency must be an integral part of training to ensure maximum utilisation of online platforms. Third, assuring long-term impact, community-based training needs to be formalised into teacher career development programs with clear incentives. And fourth, further research is recommended to evaluate the long-term effectiveness of this training in improving student learning outcomes.

## CONCLUSION

Based on the research results, online teacher competency improvement training through the Diklat.co learning community within the PMM has been proven to positively impact strengthening digital literacy, reflecting on learning practices, and bolstering collaboration between teachers in virtual spaces. The structured training process, from planning, implementation, and evaluation, demonstrated that the flexible and adaptive learning model is highly relevant to the needs of teachers in the digital era. However, limitations of this study lie in the limited scope of participants in a specific region and the limited time for post-training observations, so the long-term impact on classroom learning practices is not yet fully captured. Therefore, further research is recommended to expand the reach of participants across regions and conduct longitudinal observations to map significant changes in improving learning quality. Furthermore, an in-depth study of strategies to strengthen participants' internal motivation and platform interactivity is also crucial to support the effectiveness of digital community-based training in the future.

## Author contributions

The authors made significant contributions to the study's conception and design. The authors was in charge of data analysis, interpretation, and discussion of results. The final manuscript was read and approved by the authors.

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## Conflict of interest

The authors declare that there is no potential conflict of interest.

## Data availability statement

All data are available from the authors.

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