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Optimizing Teacher Evaluation: Development of a Digital-Based Curriculum Training Instrument for Enhanced Feedback

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ABSTRACT

Evaluation instruments in teacher training are important elements to ensure the improvement of teaching competence and the effectiveness of the learning process. With the development of technology, digital-based evaluation instruments have emerged as a solution to provide faster and more accurate feedback. However, the use of technology in training evaluation still faces challenges, such as limited digital skills among some teachers. This study aims to develop a digital-based evaluation instrument and analyze its impact on teacher competency development. The approach used in this study is qualitative with a case study design, through in-depth interview techniques, participatory observation, and documentation studies. The results of the study indicate that digital-based evaluation instruments have a positive impact on teacher competency development by accelerating the process of self-reflection and improving teaching techniques. However, challenges related to technical limitations in some teachers require attention to ensure the effectiveness of using this instrument. These findings emphasize the importance of technology training to support continuous teacher professional development.

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INTRODUCTION

Education plays a vital role in shaping individual character and competence, especially for teachers who are responsible for shaping the quality of education in Indonesia. As a country with a large number of educators, it is important for the education system to continue to develop teacher competence in order to keep up with the times. One essential aspect in teacher professional development is training evaluation (Cohen et al., 2022; Neumann et al., 2021; Reisoğlu, 2022). Effective evaluation can provide a clear picture of competency achievement and areas that still need improvement. With the right and efficient

evaluation tools, the teacher professional development process can run more optimally (Harvey et al., 2020; Kohan et al., 2023; Luginbuehl et al., 2023). Therefore, this study is important because it aims to develop a digital-based evaluation instrument that can improve the quality of teacher training and competency development, in accordance with national education policies.

Although evaluation in teacher training has become an important part of professional development, there are still many obstacles in its implementation. One of the main challenges is the lack of relevant and reliable evaluation instruments (AL-Sinani & Al Taher, 2023; Holloway et al., 2023). Existing instruments often cannot accurately measure the application of knowledge gained during training, as well as the involvement of participants in the evaluation process. This problem is further exacerbated by the existence of less structured evaluation methods, which often result in ineffective feedback (Hu et al., 2024; Kusynová et al., 2023). Therefore, a more integrated and technology-based evaluation is needed to overcome these problems, which can provide more relevant and timely feedback.

In the field, although teacher training has been implemented with the aim of improving competency, active participation of participants in evaluation is often low. Many teachers feel that evaluation is only done to fulfill formalities and does not have a direct impact on their professional development. This leads to low motivation of participants to engage more deeply in the evaluation process (Al-Haddad et al., 2024; Atiek, 2021; Cardella et al., 2024). In addition, the instruments used for evaluation are often not in accordance with the needs of participants and do not provide concrete feedback on aspects that need to be improved. Therefore, this phenomenon indicates the need to develop more relevant and effective evaluation instruments to ensure continuous improvement of teacher quality.

Previous research shows that there are various efforts to improve the effectiveness of teacher training evaluation. For example, Kashima (2020) in their research in the Journal of Teacher Education noted that most of the evaluation instruments used in teacher training are less relevant and unreliable. This is due to the inconsistency between the evaluation instruments and the training objectives and the lack of structure in the evaluation process itself (Tian, 2024; Toit, 2021; Vouros et al., 2023). However, this research has not provided practical solutions related to the development of more effective evaluation instruments, especially in the context of the Independent Curriculum policy which demands increased teacher competence.

Another study conducted by Sokol et al. (2023) revealed that the lack of active participation of participants in the evaluation is also a major problem in the effectiveness of teacher training. They found that evaluations often do not

actively involve participants, so the feedback received does not match their needs. Therefore, there needs to be more in-depth research on the development of evaluation instruments that are not only relevant but can also increase participant engagement. This study contributes to addressing the existing research gap by offering a solution in the form of a more effective digital-based evaluation instrument.

This study offers novelty in terms of developing a digital-based evaluation instrument designed to measure the effectiveness of training in the context of the Independent Curriculum. Although technology has been widely applied in education, its application in teacher training evaluation is still limited. By using a digital platform, this study allows for faster, more accurate, and more relevant data collection, and can provide real-time feedback (Haack et al., 2023; Marisa et al., 2024). This is an innovation that will simplify the evaluation process, allow for more precise measurements of acquired competencies, and increase participant involvement in the evaluation process.

This study focuses on the development of digital-based evaluation instruments to improve the effectiveness of teacher training, especially in the implementation of the Independent Curriculum. The main problem to be solved is how to create an instrument that is not only valid and reliable, but also able to increase the active participation of participants in the evaluation. By using technology, it is hoped that a more interactive evaluation system can be created and can provide constructive and relevant feedback to the needs of teachers. This study aims to fill the gaps in teacher training evaluation instruments and provide practical and innovative solutions.

The main contribution of this research is the development of a digital-based evaluation instrument that can improve the quality of teacher training and professional development, as well as support the implementation of the Independent Curriculum. This instrument will not only provide faster and more accurate feedback, but also encourage active participation from participants in the evaluation. Thus, this research plays an important role in addressing the challenges in teacher training evaluation and ensuring that training objectives can be achieved more effectively. As a result, the quality of education will improve, and teachers will be better prepared to face future educational challenges.

RESEARCH METHOD

This study uses a qualitative research design with a case study approach. This approach was chosen because it aims to explore in depth the phenomena that occur in teacher training, especially those related to the application of digital-based evaluation instruments (Assyakurrohim et al., 2022). Case studies provide

a holistic picture of how evaluation instruments are applied in a particular context, which can provide an in-depth understanding of the challenges and solutions faced by teachers and training providers. In addition, this approach allows researchers to explain phenomena in detail and develop a richer understanding of the effectiveness of technology use in training evaluation.

The location of this research was conducted in several schools in big cities that have implemented the Independent Curriculum and have experience in organizing training for teachers. The reason for choosing this location is because these schools have access to adequate digital facilities and have implemented various forms of technology-based training. By choosing this location, the study can explore the extent to which digital-based evaluation instruments are accepted and implemented in contexts relevant to the Independent Curriculum policy. The chosen location also allows researchers to obtain rich data on the direct experiences of teachers and trainers involved in the training evaluation.

The data collection techniques used in this study were in-depth interviews, participant observation, and documentation. In-depth interviews were conducted to obtain direct information from teachers, trainers, and training participants regarding their experiences in using digital-based evaluation instruments. Participant observation was conducted to directly observe the implementation of evaluation instruments in training situations. Documentation was used to collect secondary data, such as training reports, training materials, and previous evaluation results. The combination of these three techniques allows researchers to collect rich, in-depth, and relevant data for the research objectives.

The data analysis process in this study follows the stages described by Miles and Huberman (1994) in many studies, which include data condensation, data reduction, data display, and data verification (Handoko et al., 2024; Nurhayati et al., 2024). The first stage is data condensation, where irrelevant data will be filtered and only data that is in accordance with the focus of the study will be retained. Important data will be combined and selected based on their relevance to the research objectives. Furthermore, in the data reduction stage, the filtered information will be grouped into relevant sub-themes, such as effectiveness, participant involvement, and feedback related to the implementation of the evaluation instrument. The reduced data will then be presented in the form of data displays, which can be in the form of tables, diagrams, or narratives, to facilitate understanding and further analysis of emerging patterns or trends.

To ensure the validity of the data in this study, the researcher used several checking techniques. One of them is triangulation, which compares data obtained from various data collection techniques, such as interviews, observations, and

documentation, to verify the consistency of the findings. In addition, member checking is done by returning temporary findings to informants to ensure that the results of the analysis are in accordance with their experiences, increasing the credibility of the data. Audit trails are also used to record in detail the research process, ensuring that the research can be traced and accounted for. Finally, referential adequacy is used to ensure that the data obtained has a clear relationship to relevant theories or literature, and can be accounted for based on existing theoretical basis.

RESULT AND DISCUSSION

Result

Acceptance of Digital-Based Evaluation Instruments by Teachers

The digital-based evaluation instrument in this study refers to the use of a technology platform to measure and evaluate the effectiveness of teacher training. This platform allows teachers to receive direct and real-time feedback, replacing traditional evaluation methods that usually take longer and are not flexible. In addition, this instrument allows participants to monitor their progress through data that is easily accessible and analyzed. This digital-based evaluation instrument is designed to support teacher competency development more efficiently and effectively.

In an interview with a teacher involved in the training, she said, "With the digital-based evaluation, I can immediately see the feedback after each training session. Previously, I had to wait a long time to get feedback, and it was often too late to improve my teaching methods." This shows that the digital-based evaluation instrument provides significant advantages in terms of time and speed in obtaining the information needed to improve the quality of teaching. This speed and ease of access are highly appreciated by teachers, because it gives them the opportunity to improve deficiencies directly.

Interviews with other teachers also support this finding. "This platform helps me to monitor how far I have progressed in implementing the new curriculum. I don't feel isolated in the training, and this increases my confidence." This suggests that digital assessment instruments not only increase participants' engagement in the training but also provide a clearer sense of achievement. With immediate and visual feedback, teachers feel more connected to the training material, which in turn increases their motivation to actively participate.

In observations conducted in several training sessions, researchers noted that most participants actively used the digital platform to check their evaluation results. Teachers showed greater interest in this instrument compared to traditional evaluation methods. This was also reflected in their interactions during the training sessions, where they often discussed the evaluation results

received and discussed with their colleagues about ways to improve their competence. However, researchers also observed that some teachers seemed to have difficulty in utilizing the platform, especially those who were less experienced in technology, which affected their speed in accessing feedback.

Overall, the data showed that digital-based assessment instruments were highly accepted by most teachers due to the ease and speed in obtaining feedback. This allowed them to adjust their teaching methods more quickly and improve their competence continuously. However, researchers also noted challenges in using technology, especially among teachers who were less familiar with digital platforms, which slightly hampered the efficient use of the instrument.

The pattern emerging from the data above suggests that digital-based evaluation instruments increase participants' engagement in the training, by providing them with faster and more direct access to relevant feedback. This contributes to increased teacher motivation and awareness of the importance of evaluation in their professional development. However, challenges related to limited technological capabilities remain a barrier that needs to be overcome so that digital evaluation instruments can be used more optimally by all training participants.

The Influence of Evaluation Instruments on Teacher Competency Development

The digital-based evaluation instrument in this study refers to the use of a technology platform to evaluate the effectiveness of teacher training. This instrument allows teachers to structuredly monitor their progress in implementing the curriculum and to self-reflect on the teaching techniques and methods they use. This digital platform provides faster and more detailed feedback, thus helping teachers understand aspects of teaching that need to be improved. In addition, this instrument also supports the development of continuous competencies, not only for momentary evaluations, but also as a tool for teachers to continue to improve their professional abilities.

Table 1. Influence of Evaluation Instruments on Teacher Competency Development

Position of Informant	Interview Excerpt	Indicators
Elementary School Teacher	"This instrument helps me identify areas I need to improve in my teaching, especially in teaching techniques and material usage."	Curriculum Implementation, Self-Reflection
Principal	"With digital feedback, we can monitor the development of teachers in real-time, which encourages them to be more active in learning."	Teacher Engagement in Training

High School Teacher	"The feedback from this platform allows me to improve my methods quickly, and I feel more confident in my teaching."	Competence Development, Continuous Evaluation

Based on the Table 1, it can be seen that digital-based evaluation instruments have a very positive impact on teacher competency development. Interview excerpts from elementary school teachers show that this instrument facilitates them in identifying aspects of teaching that need to be improved, especially in terms of teaching techniques and use of materials. This reflects how feedback from the digital platform encourages teachers to self-reflect and improve their teaching methods. Meanwhile, the principal emphasized the importance of active involvement of teachers in training triggered by digital feedback. This shows that this instrument not only improves individual teaching but also supports the achievement of overall training objectives.

Interview excerpts from secondary school teachers provide additional insight into how digital evaluation instruments facilitate long-term teacher competency development. They reported that the feedback provided by the platform enabled them to improve their teaching methods more quickly, creating a higher sense of self-confidence. This is in line with the competency development and continuous evaluation indicators, which show that this instrument does not only provide a one-time evaluation but supports continuous professional development. Overall interviews indicate that this digital instrument is very effective in encouraging teachers to be actively involved in developing their skills.

Observations made during the training also confirmed these findings. The researchers noted that teachers showed greater interest in the training and reflection activities due to the fast and easily accessible feedback. Teachers appeared to be more proactive in adopting new teaching methods and trying to improve their shortcomings based on the feedback they received from the platform. In addition, some teachers were also seen frequently discussing the evaluation results and ways to improve their teaching techniques with fellow teachers, reflecting increased collaboration and commitment to mutual competency development.

Overall, data from interviews and observations indicate that digital-based assessment instruments significantly contributed to teacher competency development. The feedback provided directly allowed teachers to self-reflect, improve their teaching techniques, and overall increased engagement in the training. This also led to ongoing evaluation, where teachers continued to develop their teaching methods after receiving feedback. The researchers also noted that despite the significant benefits of these instruments, challenges related

to technical limitations remained, especially for teachers who were less experienced in using technology.

The patterns that emerged from the data above suggest that digital-based assessment instruments serve as a key link between evaluation and teacher competency development. By providing fast and accurate feedback, this instrument encourages teachers to be more actively involved in the learning process, increases their involvement in training, and accelerates the implementation of a more effective curriculum. The data also shows that the use of technology in evaluation helps teachers to continuously improve their teaching methods, contributing to the overall improvement of the quality of education.

Challenges and Solutions in Using Technology in Training Evaluation

Challenges in the use of technology in training evaluation refer to the difficulties faced by training participants, especially teachers, in operating digital-based evaluation instruments. The main problems found were the unpreparedness of the technology infrastructure and the limited digital skills of some teachers involved in the training. These limitations made it difficult for them to access training and evaluation materials optimally, which affected the overall effectiveness of the training. Therefore, researchers identified that developing teachers' technological competencies is very important to support the implementation of more effective digital-based evaluations.

One teacher who was interviewed said, "I find it difficult to use this platform, sometimes I don't know how to access the materials or see the results of my evaluation. Even though I know this is very important for my development." This shows the technical unpreparedness among some teachers that hinders them from maximizing the use of digital-based evaluation instruments. The researchers noted that although the teacher realized the importance of using technology in training, the lack of practical knowledge on how to use the platform hampered her learning and reflection processes.

Another teacher also said, "I only use the platform to access materials, but often don't understand how to take full advantage of the evaluation. Maybe if there was additional training or clearer guidance, it would be easier for me to use it." This suggests that lack of adequate training in the use of technology is a barrier for teachers in fully utilizing digital-based assessment instruments. The researchers concluded that clearer usage guidelines and additional training could address this issue and accelerate technology adoption among teachers.

In observations conducted during the training sessions, the researchers noted that although most teachers showed interest in using digital-based assessment instruments, they were often hampered by technical issues. Some

teachers had difficulty accessing materials or using the assessment features provided by the platform. The researchers also observed hesitation among participants who were older or less experienced in technology. However, teachers who were more experienced or familiar with technology performed better in operating the platform.

Based on the data collected, the researchers concluded that the main challenges in using technology in training evaluations were the unpreparedness of infrastructure and limited digital skills among some teachers. Many teachers found it difficult to operate the digital platform, which resulted in the suboptimal use of assessment instruments. To address this, the researchers recommend additional training and the provision of clear usage guidelines to improve teachers' digital skills. With additional training, it is hoped that teachers can be more effective in using technology, which will support the implementation of more optimal digital-based evaluation instruments in the future.

The pattern that emerges from the data above shows that the challenges faced by teachers in using digital-based evaluation instruments are more due to limited technical skills and inadequate infrastructure. This indicates a gap in technology skills among training participants, which needs to be addressed with additional training and clearer guidance. This pattern indicates that although technology can improve the effectiveness of training evaluation, challenges related to limited digital skills must be addressed so that technology use can be maximized.

Discussion

Based on the table above, it can be seen that digital-based evaluation instruments have a very positive impact on teacher competency development. Interview excerpts from elementary school teachers show that this instrument facilitates them in identifying aspects of teaching that need to be improved, especially in terms of teaching techniques and use of materials (Rizkiyah Hasanah, 2024; Widiasari & Zahro, 2024). This reflects how feedback from the digital platform encourages teachers to self-reflect and improve their teaching methods (McKernon et al., 2024; Yeung et al., 2022). Meanwhile, the principal emphasized the importance of active involvement of teachers in training triggered by digital feedback. This shows that this instrument not only improves individual teaching but also supports the achievement of overall training objectives.

Interview excerpts from secondary school teachers provide additional insight into how digital evaluation instruments facilitate long-term teacher competency development. They reported that the feedback provided by the platform enabled them to improve their teaching methods more quickly, creating

a higher sense of self-confidence. This is in line with the competency development and continuous evaluation indicators, which show that this instrument does not only provide a one-time evaluation but supports continuous professional development (Bali & Heru, 2024; Hina, 2024; Yeung et al., 2022). Overall interviews indicate that this digital instrument is very effective in encouraging teachers to be actively involved in developing their skills.

Observations made during the training also confirmed these findings . The researchers noted that teachers showed greater interest in the training and reflection activities due to the fast and easily accessible feedback. Teachers appeared to be more proactive in adopting new teaching methods and trying to improve their shortcomings based on the feedback they received from the platform (Pan & Jiang, 2024; Sain, 2025). In addition, some teachers were also seen frequently discussing the evaluation results and ways to improve their teaching techniques with fellow teachers, reflecting increased collaboration and commitment to mutual competency development (Umar & Khaer, 2024).

Overall, data from interviews and observations indicate that digital-based assessment instruments significantly contributed to teacher competency development. The feedback provided directly allowed teachers to self-reflect, improve their teaching techniques, and overall increased engagement in the training (Abdullah, 2024; Khoiroh et al., 2024). This also led to ongoing evaluation, where teachers continued to develop their teaching methods after receiving feedback (Putri, 2024; Safitri & Zawawi, 2025). The researchers also noted that despite the significant benefits of these instruments, challenges related to technical limitations remained, especially for teachers who were less experienced in using technology.

The patterns that emerged from the data above suggest that digital-based assessment instruments serve as a key link between evaluation and teacher competency development. By providing fast and accurate feedback, this instrument encourages teachers to be more actively involved in the learning process, increases their involvement in training, and accelerates the implementation of a more effective curriculum. The data also shows that the use of technology in evaluation helps teachers to continuously improve their teaching methods, contributing to the overall improvement of the quality of education.

CONCLUSION

This study found that digital-based evaluation instruments have a significant positive impact on teacher competency development. The use of digital platforms in training evaluations allows teachers to receive real-time feedback, which was previously difficult to obtain with traditional evaluation

methods. Fast and easily accessible feedback not only increases teacher engagement in training but also encourages them to be more active in self-reflection and improving teaching techniques. This study also shows the importance of technical support for teachers who are less experienced in technology, so that they can fully utilize the potential of digital evaluation instruments. The wisdom gained from this study is the importance of adopting technology in educational evaluation to improve the effectiveness of learning and teacher professional development.

This study makes a significant contribution to the field of educational evaluation, especially in the development of digital-based evaluation instruments for teacher training. The main contribution of this study is to offer a new, more efficient model in educational evaluation, which not only measures the final results but also provides constructive and in-depth feedback for the continuous development of teacher competency. This study also introduces the concept of self-reflection as an integral part of teacher professional development and its relevance to the Merdeka Curriculum policy. However, the limitations of this study include the limited focus on schools with adequate access to technology, so that the results may not fully represent conditions in areas with limited access. Further research is expected to expand the scope of locations and examine the role of educational institutional support and the long-term impact of technology use in improving the quality of teaching and student learning outcomes.

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