



Development of a Transformative Learning Model Supported by the LMS "Setara Daring" to Enhance Critical Attitudes of Learners in the Equivalency Education Program in Bandung City

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Abstract. Transformative learning involves fundamental changes in an individual's perspectives, beliefs and assumptions, facilitating personal growth, improving critical thinking skills and increasing selfawareness. In the context of online learning, the importance of transformative learning lies in its ability to shape the learning experiences and outcomes of learners in a virtual environment. This study aims to describe and analyze the conditions of LMS-assisted learning "Setara Daring" in equivalency education in Bandung City, West Java, as well as the critical attitudes of learners and provide an overview for the development of an LMS-assisted transformative learning model to improve the critical attitudes of learners. This research was conducted at 3 PKBMs in Bandung City, namely PKBM Bina Cipta Ujungberung, PKBM Sukamulya, and PKBM Bina Insani. The research method used is a qualitative approach with descriptive analytics involving data collection techniques such as in-depth interviews, participatory observation, and document analysis. The research analysis will be interpreted to develop a deeper understanding of the aspects studied. The results show that the implementation of learning with the "Setara Daring" LMS has been carried out in equivalency education but there are still a number of challenges that need to be overcome, such as limited internet access that is not evenly distributed, the availability of adequate devices, and technological readiness in terms of tutors and learners. These problems are part of the process of developing a transformative learning model assisted by an LMS. The implication of this research emphasizes the importance of the active role of all related parties in supporting the transformation of learning that is innovative and oriented towards improving the critical attitude of learners.

Keywords: Transformative Learning Model, Learning Management System, Online Equivalent, Critical Attitude, Equivalency Education.

INTRODUCTION

Transformative learning is a significant educational concept that involves fundamental changes in an individual's perspectives, beliefs, and assumptions. Transformative learning can also be described as a process in which learners critically reflect on existing frames of reference, challenge their established viewpoints, and ultimately develop new, more inclusive and reflective ways of understanding the world (Mezirow, 2003). This type of learning is characterized by changes in one's worldview and frames of reference, leading to increased awareness and deeper understanding of oneself and the surrounding environment (Dong et al., 2018). The importance of transformative learning lies in its ability to facilitate personal growth, enhance critical thinking skills, and improve self-awareness (Calderwood & Rizzo, 2022). By engaging in transformative learning experiences, individuals can free themselves from limited ways of thinking and behaving, leading to more open-minded and adaptable approaches to life (Hodge, 2018).

Transformative learning is crucial in educational settings as it can lead to significant changes in leadership practices, promote sustainability, and encourage social learning (Boström et al., 2018; Kim, 2018; Rekola & Paloniemi, 2018). Furthermore, transformative learning is not only limited to individual development but also extends to organizational and societal levels. Transformational leadership behaviors, demonstrated by leaders who encourage and facilitate the flow of learning, have been shown to nurture individual learning and contribute to organizational learning processes (Hariharan & Anand, 2023). In the context of sustainability,

transformative learning is essential for communities, organizations, and individuals to address global challenges and navigate the social conflicts involved in transformation (Bhadri & Patil, 2022).

Since the Covid-19 pandemic, online learning has been introduced and implemented across all educational domains, including informal, formal, and non-formal education. Not only has formal education transformed in more sophisticated and efficient ways, but equivalency education also needs to adapt to online-based learning. Transformative learning is an important aspect of online learning systems because it plays a crucial role in shaping learners' experiences and outcomes in virtual environments. Online learning platforms can be designed to enhance learner motivation, engagement, and reflection, thus facilitating transformative experiences (Hartnett et al., 2011). By focusing on increasing social presence in online learning communities, educators can create a sense of connection and interaction essential for transformative learning (He, 2022).

The flexibility and accessibility of online system resources allow learners to reflect on past experiences, challenge assumptions, and undergo transformative changes in their perspectives (Zhao & Zhao, 2017). One of the developments in equivalency education is the use of the Learning Management System (LMS) "Setara Daring," which aims to support educational access for all learners regardless of their backgrounds.

A Learning Management System (LMS) can be defined as a software system that virtualizes conventional teaching and learning processes for administration, documentation, training program reports, online classrooms and events, e-learning programs, and training content (Nada et al., 2022). For example, it includes all features related to the management of teaching and learning processes, such as class management, content creation, discussion forums, grading systems (report cards), and online examination systems, all accessible via the internet.

However, despite its many advantages, online learning significantly impacts learners' critical thinking skills, which are essential for surviving, adapting to, and adopting online learning systems. The importance of critical thinking skills in online learning systems cannot be overlooked. Critical thinking is a vital ability for developing a deep understanding, careful analysis, and objective evaluation of the information obtained. In the context of online learning, critical thinking becomes even more important because learners need to process information independently, identify the truth from various sources, and develop a critical perspective on learning materials (Gorshenin, 2018; Parno et al., 2019; Sijabat et al., 2021).

Directed online discussions, learning content that stimulates critical thinking, and clear instructions are some of the important factors needed by online course instructors to enhance learners' critical thinking skills (Hussin et al., 2018). Critical thinking enables learners to analyze information in depth, evaluate arguments, and logically structure their thoughts. In online learning, where information is often presented in digital format, this ability is essential for accurately understanding and interpreting content (Abrami et al., 2008). Critical thinking helps learners identify problems, formulate effective solutions, and make informed decisions. In online learning, where direct interaction is limited, this ability allows students to independently tackle learning challenges (Coyne et al., 2021).

Additionally, critical thinking skills enable learners to develop independent learning, where they can manage time, plan learning strategies, and evaluate their own learning progress. In the context of online learning, independent learning is key to student success (Persky et al., 2019). Critical thinking allows learners in equivalency education to clearly express opinions, ask relevant questions, and actively participate in online discussions. This ability enriches learner interaction and enhances collaboration in online learning environments. Therefore, critical thinking skills in online learning systems not only support better academic achievement but also prepare learners to face real-world challenges more effectively and skillfully. For adult learners, critical thinking skills are essential for problem-solving, innovation, and adapting to changes. Equivalency education learners with critical thinking skills will be better prepared to enter the workforce and contribute effectively.

The importance of critical thinking skills in online learning should be recognized as a fundamental ability for learners in equivalency education, supporting the absorption of various lessons provided. To develop learners capable of critical thinking, the learning activities must start by creating an enjoyable learning environment, involving learners' potential and their surroundings, and developing facilitation strategies that align with learning objectives (Aларcon et al., 2022; Chakraborty & Nafukho, 2014). Additionally, providing constructive and supportive feedback can help learners feel valued and motivated to engage more actively in learning (Arghode et al., 2018).

In the context of equivalency education, the optimal use of Learning Management Systems (LMS) is believed to enhance learners' academic performance, impacting the learning outcomes achieved (Kearns et al.,

2014; Krismanto & Tahmidaten, 2022). High learner achievement indicates successful learning and the fulfillment of learning objectives. LMS can also foster the development of learners' critical thinking skills by providing the freedom to seek information without spatial and temporal limitations. LMS serves as an important facility for enhancing social interaction between equivalency education learners and tutors, enabling easy and quick communication.

LMS greatly assists learners in accessing broader and faster information and interacting with other learners more easily. However, LMS adoption as a learning medium still faces challenges. One major issue is the limited technological infrastructure, such as uneven internet access and unstable network quality, especially in rural areas (Asti, 2021). Technical problems like network disruptions and non-technical issues such as the lack of readiness among learners and teachers also pose challenges in online learning (Rovi et al., 2022). Indonesia's developing infrastructure and technology significantly impact LMS implementation across various regions, including Bandung. Although Bandung is one of Indonesia's major cities, some areas, particularly mountainous regions, still struggle with internet access. Internet signal issues can be a primary problem for learners participating in online learning. Discipline issues also hinder online learning, as distance learning often introduces distractions not present in face-to-face learning, such as television, chatting family members, and video games (Annur et al., 2020; Yulianti & Utomo, 2020; Aini, 2021).

Additionally, the features of LMS often pose challenges for learners to understand. On a single platform, learners may find it difficult to navigate, and the use of multiple applications to achieve learning goals can be even more daunting. Features like Zoom, Google Meet, and Google Classroom support the LMS learning process. Complex navigation and non-intuitive user interfaces in LMS can hinder effective use by learners and teachers (Kopp, 2023). However, despite these challenges, LMS remains one of the primary methods for learners to acquire information and lessons online (Al-Qahtani & Higgins, 2012; Ekuase-Anwansedo & Smith, 2019).

Given the various issues that have been discussed, transformative learning is needed in the LMS learning process, particularly "Setara Daring," an LMS application designed for distance learning in equivalency education. Additionally, previous research examining critical attitudes, media usage, and their relationship with improved learning outcomes has shown that increased experience in interacting both inside and outside one's own environment influences an individual's level of critical thinking (Elarab & Maddy, 2020; Mizal et al., 2021). Moreover, the higher the level of correct social media usage in learning, the greater the satisfaction among learners, thereby increasing learning motivation, which can positively impact learning outcomes.

This transformative learning approach is expected to enhance learners' critical attitudes, as critical thinking plays a crucial role in ensuring that the use of LMS is not only effective but also maximizes the benefits for the learning process (Harahap & Bayharti, 2021; Samudera et al., 2022). Given the identified issues, this research focuses on describing and analyzing the empirical conditions of the LMS-assisted learning implementation of "Setara Daring" in the equivalency education program in Bandung City, West Java, the critical attitudes of learners in the equivalency education program in Bandung City, West Java, and recommendations for developing a transformative learning model assisted by "Setara Daring" LMS to improve the critical attitudes of equivalency education learners in Bandung City, West Java.

METHODOLOGY

This research was conducted using a qualitative approach with descriptive-analytical study. The qualitative research method with descriptive-analytical aims to describe or provide an overview of an object being studied through collected data or samples as they are, without making general conclusions. This descriptive-analytical research aims to obtain a systematic, factual, and accurate picture of the facts, characteristics, and relationships between the phenomena studied (Miles & Huberman, 1994). This study analyzes the empirical conditions of the LMS-assisted learning implementation "Setara Daring" and the critical attitudes of learners in the equivalency education program in Bandung City, to formulate recommendations for developing a transformative learning model assisted by "Setara Daring" LMS to enhance the critical attitudes of equivalency education learners in Bandung City, West Java.

The research locus is in Bandung City, which organizes equivalency education (A, B, C) using the LMS "Setara Daring," specifically at 1) PKBM Bina Cipta Ujungberung, 2) PKBM Sukamulya, and 3) PKBM Bina Insani. The sampling technique was purposive sampling with several criteria, including: (1) Informants are tutors or facilitators (managers and tutors) in equivalency education at the research locus, (2) Informants are learners in equivalency education at the research locus, (3) Informants are active participants in the "Setara

Daring" LMS learning process. Data collection was conducted through various techniques, such as in-depth interviews, participatory observation, and document analysis.

Primary data will be collected from direct participants in the case study, while secondary data may come from relevant sources such as literature or related documents. The data analysis technique involves several stages, including data collection within the predetermined research boundaries, data reduction to ensure proper data presentation, and finally drawing conclusions to answer the research questions. The collected data will be organized systematically to facilitate analysis, including interview transcriptions, data classification, and grouping findings based on emerging themes or patterns. The analysis results will be interpreted to develop a deeper understanding of the phenomenon being studied. Conclusions will be drawn based on the main findings and their implications for theory, practice, and future research.

RESULT AND DISCUSSION

Implementation of LMS-assisted learning "Setara Daring" in the equivalency education program in Bandung City

LMS "Setara Daring" is designed to support equivalency education, providing access to learners who wish to pursue education outside the formal system. This platform aims to enhance the quality of learning by offering materials that can be accessed anytime and anywhere, accommodating the needs of flexible learning (Awad et al., 2022; Etfita et al., 2022; Walugembe et al., 2022). However, the implementation of this program in Bandung City faces several challenges. One of the main challenges is the uneven internet access across the city. Although Bandung is a major city with relatively good infrastructure, certain peripheral areas still lack adequate internet connectivity. This makes it difficult for learners in these areas to consistently access materials and participate in learning.

Additionally, the availability of adequate devices is also a hurdle. Many learners come from lower-middle economic backgrounds and do not possess ideal devices such as laptops or tablets for online learning. Most still rely on smartphones, which, although useful, have limitations in terms of display and functionality for intensive learning activities.

The technological readiness of educators is also a crucial factor. Educators need to adapt to new teaching methods and learn to use various tools and features available in the "Setara Daring" LMS. Research findings indicate that tutors are quite prepared to use the "Setara Daring" LMS in the teaching and learning process, as expressed by a tutor from PKBM Bina Cipta Ujungberung with the following statement:

"I am very ready to deliver lessons and quite proficient in the features available on the 'Setara Daring' LMS. Additionally, I prepare the materials and list of questions well to be presented to the learners on the LMS."

However, the research findings also indicate that this process requires training and time, and not all learners have the same level of comfort with using new technology. Some tutors may experience difficulties in effectively integrating technology into their teaching. On the other hand, the "Setara Daring" LMS offers many significant benefits. This platform allows for more structured and monitored teaching, with features such as online quizzes, discussion forums, and video materials that can be revisited. This provides learners the opportunity to study at their own pace, review difficult material, and interact with teachers and fellow learners more flexibly.

The interactions that occur through this platform also add a new dimension to the learning process. Discussions in online forums allow learners to share their views and ask questions openly, which might be more challenging in a conventional classroom setting. This can enhance learners' understanding and engagement in the learning process.

The research findings also highlight the critical role of tutors in enhancing the critical thinking skills of learners. Tutors have several effective methods, as expressed by a tutor from PKBM Sukamulya:

"My method as a tutor to enhance learners' critical thinking skills is by relating the material to trending facts or activities relevant to the learners' fields."

Several aspects can also be addressed to enhance learners' critical thinking skills, such as designing challenging and thought-provoking learning content. This might include case studies, real-life issues relevant

to daily life, and scenarios that require in-depth analysis. The content should be presented in various formats, such as text, video, and simulations, to engage interest and accommodate different learning styles (Mizal et al., 2021; Parker et al., 2015; Yusriadi, 2021).

Additionally, the LMS should be used to provide discussion forums and virtual study groups. In these spaces, learners are encouraged to discuss, exchange opinions, and ask questions. Moderators or tutors can guide and stimulate deeper discussions by posing open-ended questions that require critical thinking to answer. Social interaction is crucial for developing argumentation skills and reflective thinking. Moreover, the LMS can support the assignment of tasks and projects that require learners to research, analyze, and present their findings. These tasks should be designed to challenge their assumptions, encourage exploration of various perspectives, and develop creative solutions to complex problems. Through constructive feedback provided by tutors, learners can identify their strengths and weaknesses in thinking and find ways to improve them (Obenaus-Emler et al., 2021; Wahyuni, 2019).

The LMS program should also offer additional resources such as articles, journals, and access to digital libraries. These resources are essential for supporting independent research and enriching learners' knowledge. Accessing various sources of information helps them develop the ability to distinguish valid and relevant information from what is not. It is also important to utilize LMS technology to track learners' progress and performance. With learning analytics, tutors can monitor participation, engagement, and understanding, and then adjust their teaching strategies according to individual needs. This data can be used to provide additional support to those who need it and design personalized interventions.

Research findings also show that tutors have been working to implement the values of the "Setara Daring" LMS in their teaching process, as reflected in the response from a tutor at PKBM Bina Insani regarding strategies for adapting material design to learning needs.

"I strive to adjust the material design according to the needs of the learners and incorporate an innovative system to develop critical thinking, such as conducting question-and-answer sessions during learning activities."

Effective communication and continuous support from tutors and mentors are crucial. They act as facilitators who help learners develop their critical thinking through guidance, feedback, and encouragement. By fully utilizing the capabilities of the LMS, equitable education can become a powerful platform for developing learners' critical thinking, allowing them to become more independent and reflective thinkers. Based on the implementation of LMS in Bandung, especially in the research locus, the integration has been quite good, but there are still some obstacles such as features in English and occasionally inadequate devices. Learners often complain about issues related to internet signal problems, as expressed by a learner from PKBM Bina Cipta Ujungberung:

"I often face issues with internet signals and run out of data, which causes me to fall behind in lessons and have to repeat them. I find it somewhat difficult to follow the learning with this LMS because the facilities I have are still not fully supportive."

Other challenges faced by learners include adjustments at the beginning of each new academic year. Generally, there are some obstacles, but over time, adjustments can be made among the managers, tutors, and learners. Over time, learners will be gradually introduced to the features of the online application, allowing them to adapt. Tutors also strive to ensure learners' active interaction, requiring them to continuously engage with the device screens accessed for the LMS. When asked how managers ensure all learners are involved, they mentioned that they engage in two-way communication and monitor when learners face difficulties.

"As tutors, we monitor and assess their activity, correctness of answers or assignments. Additionally, to receive feedback, we also use brief reports and ask learners to openly express any issues in the LMS 'Setara Daring' learning process."

The research findings indicate that, overall, this LMS greatly assists both learners and tutors in the learning process. Online discussions, forums, and chat rooms provide opportunities for students to interact, exchange ideas, and learn from each other, creating a collaborative learning environment even though it is virtual. These features help reduce the sense of isolation that may be experienced in distance learning and facilitate important peer-to-peer support (Çavuş et al., 2021; González et al., 2020). The LMS also makes it easier to track each individual's learning progress. Learners can view their achievements through a dashboard that displays task statuses, quiz results, and completed modules. This helps them stay motivated and accountable for their own

learning process (Joseph & Egwuasi, 2022; Magno, 2010). This finding aligns with the experiences of a learner from PKBM Sukamulya, who expressed:

"Even though I am still in the process of understanding learning with this LMS, I am very pleased and enjoy it. I have also gained new knowledge so I am not so out of touch with technology. The LMS also makes it easier for me because I don't have to be physically present at PKBM."

The empirical conditions of implementing LMS "Setara Daring" in the equitable education program in the research locus have been established, although some challenges remain difficult to overcome. However, some PKBMs are still working to plan innovations that can continuously optimize the "Setara Daring" program, such as preparing engaging and enjoyable multimedia according to the teaching material and continually updating skills in using media and online applications in line with technological developments.

The critical thinking attitude of learners in the equitable education program in the Bandung City area, West Java

In the context of the Equitable Education Program, a critical attitude is very important. This program is designed to provide opportunities for those who do not have access to formal education to gain knowledge and skills equivalent to formal education. By developing a critical attitude, learners can more effectively understand lesson material, apply knowledge in daily life, and make better decisions. Research findings indicate that tutors interpret the critical attitude of learners in different ways. For example, the tutor from PKBM Bina Cipta Ujungberung stated:

"The definition of a critical attitude in the context of learning in the equitable education program for me is that learners are able to relate the material to everyday facts."

On the other hand, the tutor from PKBM Bina Insani defined a critical attitude as follows:

"For me, a critical attitude in learners is their activity and critical response during the online learning process."

The tutor from PKBM Bina Sukamulya interprets the critical attitude of learners as follows:

"For me, a critical attitude is the ability of learners to communicate logically and interact effectively, as well as to complete various tasks and quizzes provided by the tutors."

A critical attitude is one of the essential skills that learners and even tutors should have in the LMS "Setara Daring" learning environment. Most learners at PKBM Bandung show great potential in developing a critical attitude. They come from diverse backgrounds and bring unique life experiences, which provide them with different perspectives and the ability to view issues from various angles. Facilitators at PKBM work hard to encourage open discussions and teach analytical thinking methods, enabling learners to sharpen their skills in critically assessing information and making informed decisions. However, there are several challenges in developing this critical attitude. One challenge is the limitation of resources and facilities available. Some PKBM centers have limited access to the latest technology or adequate teaching materials, which can restrict learners' ability to explore information further. Additionally, the varied educational backgrounds of learners also affect their readiness to think critically. Some may not be accustomed to learning methods that require active participation and in-depth analysis.

In terms of the tutor's role in the learning process, tutors play a key role in fostering a critical attitude among learners. Tutors act as facilitators who help create a conducive learning environment for developing critical thinking skills. Through interactive and dialogic approaches, tutors can encourage learners to actively participate in discussions, ask questions, and critically evaluate the information they receive.

Tutors encourage learners to view problems from various perspectives. This can be achieved by providing relevant case studies or hypothetical situations that require in-depth analysis. In this way, learners are encouraged to consider different possibilities and consequences of each action or decision, learning not to accept information at face value without further examination.

In learning sessions, tutors also integrate techniques that stimulate critical thinking, such as group discussions, debates, and research projects. Group discussions, for example, provide learners with the

opportunity to share views and test their arguments in a safe and supportive forum. Debates help them refine their argumentation and counter-argument skills, while research projects encourage them to explore topics in depth and present their findings critically. Research findings indicate that tutors at PKBM centers in Bandung have been promoting critical attitudes under current conditions, as expressed by an informant from PKBM Bina Cipta Ujungberung:

"As tutors, we have a role in delivering the material effectively and communicatively. Additionally, to ensure that the material is relevant, we connect it with current conditions to stimulate interest and foster a critical attitude among the learners participating in the LMS."

Through a combination of these various approaches, tutors act as catalysts in shaping the critical attitudes of learners. They help create a learning environment that values curiosity, promotes healthy skepticism, and encourages deep analytical thinking. As a result, learners in equivalency education not only gain knowledge but also develop critical thinking skills that will be useful in various aspects of their lives. However, observations by the researcher show that only a few learners appear active in the learning process with the LMS. Many learners in the equivalency education program come from environments with limited access to adequate educational resources (Mokonyane & Moodley, 2022; Wanabuliandari et al., 2021). This situation leads to a lack of exposure to critical thinking-stimulating teaching methods from an early age. Without a strong foundation in critical thinking skills, learners may struggle to develop these abilities later on. When interviewed, one learner from PKBM Sukamulya expressed the following:

"Before participating in this LMS-based learning, I did not understand much about technology or gadgets. I found it difficult to grasp the material because I was solely focused on using the features of this 'Setara Daring' learning platform."

Research findings also indicate that the critical attitude of learners in equivalency education is greatly influenced by their social environment and peers. In addition to intrinsic motivation, extrinsic motivation plays a crucial role in optimizing learners' critical attitudes. Overall, the critical attitude of learners in equivalency education is affected by a combination of educational and socio-economic backgrounds, teaching methods, tutor quality, personal motivation, environmental support, and access to educational resources. Addressing these challenges requires a comprehensive approach that improves overall educational quality and provides adequate support for learners to develop essential critical thinking skills.

Recommendations for Developing a Transformative Learning Model Assisted by LMS "Setara Daring" to Enhance Learners' Critical Attitudes

Based on the research findings regarding the implementation of learning with LMS and learners' critical attitudes, a model can be developed with the aim of emphasizing transformative learning so that various issues in LMS learning can be continuously minimized. By integrating LMS, this model can provide a platform that supports better interaction and collaboration among learners and between learners and tutors. Various issues related to delays can be addressed through joint study sessions where learners share materials with peers who missed lessons due to signal issues or inadequate devices. Additionally, the development of a transformative learning model involves essential components. Discussion forums and collaborative activities are crucial in this model. Discussion forums provide space for learners to share viewpoints, question assumptions, and develop their arguments. Collaborative activities, such as group projects, enable learners to work together, exchange ideas, and solve problems collectively. This interaction can facilitate a more dynamic and critical learning process.

The transformative learning model assisted by LMS "Setara Daring" is designed with key components that encourage critical thinking. These components include challenging learning materials, reflective assignments, discussion forums, and collaborative activities. Learning materials should cover topics relevant to real life and stimulate critical questions. Additionally, reflective assignments can encourage learners to reflect on their personal experiences and relate them to new concepts they are learning. LMS "Setara Daring" should provide an active and structured discussion forum. Moderators or facilitators need to ensure that discussions remain focused and constructive, and encourage participation from all learners. Furthermore, collaborative projects should be designed to facilitate cooperation and interaction among learners. The use of collaborative tools like shared documents and virtual workspaces can support this process.

Regarding tutors, the design of the transformative learning model needs to prioritize adequate training to

transform learning and continuously identify issues in the LMS learning process. This training should cover discussion facilitation techniques, reflective assessment, and effective use of LMS. Additionally, ongoing support through professional discussion groups and online resources can help teachers develop their skills.

The goal of developing a transformative learning model is to ensure that learning with LMS runs optimally and sustainably and is well-understood. Another important aspect is the involvement of learners in the learning process. The LMS-based transformative learning model must ensure that learners are not only passive recipients of information but also active agents in their learning. This can be achieved through student-centered teaching methods, where learners are given space to explore topics relevant to their own experiences and engage in projects requiring critical thinking (Bryant et al., 2021; Chang, 2021; Phurong et al., 2019). Based on the research findings, to support this transformative learning model, adequate technological infrastructure is needed. Stable internet access and appropriate devices are crucial. Governments and equality education providers need to work together to ensure that all learners have fair access to this technology. Technology assistance programs or device provision initiatives can be concrete steps to address these barriers.

By developing and implementing the LMS "Setara Daring" assisted transformative learning model, equality education can be significantly improved. These measures not only aid in developing learners' critical thinking skills but also equip them with the competencies needed to fully participate in modern society (Foshee et al., 2017; Ubaidah, 2023). The integration of technology in the learning process should be seen as a tool to empower learners, enabling them to reach their full potential in a supportive and interactive environment.

CONCLUSION

To improve access to and the quality of equality education in Bandung City, several measures are required. However, there are still challenges that need to be addressed, such as uneven internet access, the availability of adequate devices, and the technological readiness of both educators and learners. These challenges also affect efforts to enhance learners' critical attitudes. Although tutors have made efforts to develop critical thinking, such as linking materials to everyday facts, facilitating discussions, and presenting challenging assignments, there are still barriers related to technological readiness and adequate educational environments.

The LMS-assisted transformative learning model is also oriented towards integrating various key components, including engaging learning materials, reflective assignments, discussion forums, and collaborative activities. Although most tutors are reasonably prepared to use the "Setara Daring" LMS, this process requires training and time, and not all learners have the same level of comfort with new technology. Adequate training for tutors and student-centered learning approaches are also important aspects of this model.

Based on the research findings, it is recommended that the government and equality education providers maintain long-term collaboration with the goal of improving infrastructure and strengthening LMS-based learning that focuses on enhancing learners' critical attitudes.

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