Attractive : Innovative Education Journal
Vol. 8 No. 2, July 2026

Digital Learning Design Innovation: Evaluating Behavioral Intention to Use Microlearning in Child Protection Professional Training in Indonesia

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ARTICLE INFO
Article history:
Received
February 15, 2026
Revised
May 24, 2026
Accepted
June 20, 2026

ABSTRACT

The high prevalence of child protection cases necessitates continuous professional learning; however, conventional training models often lead to training fatigue due to time constraints, heavy workloads, and the demanding nature of frontline responsibilities. This study aims to evaluate learners' acceptance of microlearning-based e-learning as an instructional design innovation for professional training in child protection in Indonesia. Guided by the Technology Acceptance Model (TAM), the study examines the influence of Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) on Behavioral Intention (BI). A quantitative approach was employed involving 136 respondents from cross-sectoral professional backgrounds within child protection ecosystems, selected through purposive sampling. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results reveal that the proposed model demonstrates strong predictive power ($R^2 = 0.661$). PEOU shows a strong positive effect on PU, and both PEOU and PU significantly influence BI. Notably, PEOU contributes more substantially than PU in shaping learners' intention to adopt the platform. These findings indicate that system usability, intuitive interaction, and flexibility of learning access are critical determinants of adoption among professional learners. Furthermore, ease of use is found to support the reduction of cognitive load, enabling learners to focus more effectively on complex and sensitive child protection materials. The study concludes that the success of digital learning innovations in professional contexts depends not only on perceived instructional benefits but also on the ergonomic quality of user experience (UX) that accommodates professionals' work rhythms and learning needs.

Keywords: Microlearning, Technology Acceptance Model, Behavioral Intention, Professional Training, Child Protection

Journal Homepage https://attractivejournal.com/index.php/aj/

Published by CV. Creative Tugu Pena

INTRODUCTION

Children around the world continue to face significant risks related to child labor and sexual exploitation, despite various protection efforts. This is evident in the fact that 1 in 5 children are child laborers in the poorest countries (UNICEF, 2024). In addition, high numbers are also found in cases of sexual exploitation, with the ILO estimating that around 1.8 million children were involved in such cases in 2002 (International Labour Organization (ILO), 2015). Children's vulnerability to sexual exploitation is increasing with the development of technology; data from UNSW Media & Childlight Global Child Safety Institute (2024) shows that there are more than 300 million child victims worldwide who have experienced sexual exploitation in the online realm.

In Indonesia, child labor reaches 1.01 million individuals, accounting for 2.39%. This prevalence is not far from the 2019 data (2.35%) (Badan Pusat Statistik (BPS), 2023), indicating a

stagnation in child labor in Indonesia. In addition, the rate of violence against children has increased from 2019 to 2024, predominantly involving sexual violence. The stagnant and even annually increasing rates of child labor and child sexual exploitation indicate that there is still a gap in child protection knowledge and practices in Indonesia.

The high rate of child protection violations, such as child labor and child sexual exploitation, places professional workers—both those who interact directly and indirectly with children—in a crucial position. Binford (2023) posits that child protection is one of the most complex and sensitive domains of professional practice, as frontline professionals must navigate legal, ethical, psychological, and socio-cultural dimensions when responding to cases of child abuse and neglect. Professionals working in this field, including social workers, educators, counselors, and child welfare officers, routinely encounter multidimensional cases that require high-stakes decision-making with significant implications for the safety, well-being, and development of children (Şahin & Kartal, 2026).

It is not only professional workers who interact directly with children; professionals who do not have direct contact with children also hold a vital position in embedding child protection interests within structures, processes, and outcomes (Collins, 2014). Crane & Kazmi (2010) highlight that in working realities, the impact of business operations on children is often overlooked. Decision-making in the context of working either directly or indirectly with children requires not only conceptual understanding but also professional judgment built through continuous learning and reflective practice (Munro, 2019).

Parton (2024) asserts that the professional reality of workers in the child protection sector necessitates continuous learning to ensure that their knowledge remains up-to-date, their professional judgment remains sharp, and their intervention competencies are strengthened. Practitioners need to continuously update their understanding regarding regulatory frameworks, intervention strategies, trauma-informed approaches, and risk assessment procedures. However, sustained participation in conventional training programs frequently encounters obstacles. Lengthy face-to-face sessions often clash with the heavy workloads, emergency responsibilities, and emotional pressures inherent in frontline child protection work (Walsh et al., 2022). Additionally, professionals may experience training fatigue when learning activities are perceived as time-consuming, lacking relevance to direct practical needs, or insufficiently responsive to the complexities of real-life cases (Sitzmann & Weinhardt, 2018).

In this context, microlearning-based Learning Management System (LMS) (Read: Microlearning-LMS) represents not only a technological alternative but also a pedagogically meaningful instructional strategy. The microlearning approach allows complex and sensitive materials to be organized into more manageable learning segments, thereby supporting progressive understanding, reflection, and contextual application (Mayer & Fiorella, 2022). Short learning modules have the potential to reduce cognitive load while accommodating the fragmented learning patterns prevalent in professional practice. Therefore, microlearning holds significant potential to enhance engagement and knowledge retention in professional training (Moslemi Nezhad Arani & Atasoy, 2025). The relevance of microlearning-based e-learning becomes increasingly pronounced in the context of professional training within domains characterized by conceptual complexity and contextual sensitivity, such as child protection.

Despite its promising pedagogical potential, the effectiveness of Microlearning-LMS is heavily influenced by how learners perceive and accept the learning system. The success of digital learning innovations is determined not only by the availability of technology but also by learners' perceptions of its ease of use and perceived usefulness (Scherer et al., 2019). Learners' assessments regarding the ease of interacting with the system, as well as their belief that the system provides tangible benefits for their learning and professional tasks, will influence their willingness to adopt and continuously use the platform (A. Granić & Nikola Marangunic, 2019).

The Technology Acceptance Model (TAM) provides a relevant theoretical framework for examining learners' acceptance of digital learning systems. TAM postulates that Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) are the primary cognitive determinants influencing Behavioral Intention (BI) to use a technology (Davis & Granić, 2024). In the educational context, PEOU reflects learners' perceptions of the degree of ease in using the

learning platform, whereas PU illustrates the extent to which learners believe that the system enhances learning effectiveness or professional performance. Both of these constructs become highly relevant in a microlearning environment, where design simplicity and perceived instructional value play a critical role in learner engagement (A. Granić & Nikola Marangunic, 2019).

Research from Lolang & Putra Pratama (2025) confirms that integrating *microlearning* into LMSs increases the flexibility and effectiveness of the learning process. However, most studies applying TAM in the context of e-learning focus on formal education settings, while studies in professional environments are still relatively limited (A. Granić & Nikola Marangunic, 2019). Research on microlearning berbasiskan LMS (selanjutnya: Microlearning-LMS) n the context of professional training, especially in sensitive social domains such as child protection, is still relatively limited. Professional learners have different characteristics compared to students, because their learning process is more influenced by their work roles, practical work experience, and limited learning time (Littlejohn & Pegler, 2007). These differences indicate that the mechanism of forming intentions to use digital learning innovations can vary according to the population and professional domain.

In addition, e-learning for child protection faces a crucial challenge because it is voluntary. In this context, the urgency of technology adoption becomes even more crucial because the success of the program and institutional investment depends heavily on the willingness and participation of users to accept and use the platform (Sönmez & Özdamar, 2024; Venkatesh & Bala, 2008; Žvanut et al., 2011). The low level of adoption and utilization of information technology is one of the main causes of the productivity paradox, which is a condition where large investments in technology are not directly proportional to improvements in organizational performance (Venkatesh & Bala, 2008). In such situations, organizations have the potential to experience significant financial losses because the systems that have been built are not used optimally. Žvanut et al. (2011) even emphasizes that investing in new technology is essentially very risky if, in the end, users refuse to use the system that has been provided.

Based on this background, this study aims to understand the Behavioral Intention of students in using Microlearning-LMS in the context of child protection education through the basic TAM framework. The child protection Microlearning-LMS is designed using Kern's Six Step approach, which is often used as a reference in developing curricula for online learning or microlearning (Gómez et al., 2021; Lai-Kwon et al., 2023). Specifically, this study analyzes the role of Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) in influencing Behavioral Intention (BI) in the context of professional training in child protection in Indonesia. This study is expected to contribute to the development of learning innovation studies, digital instructional design, and understanding of technology acceptance in professional education. Furthermore, considering that frontline professionals working in this field must navigate highly sensitive ethical and legal dimensions in responding to child cases, this learning design innovation is expected to be an integrated approach that not only transfers conceptual understanding but also strengthens reflective practices and the ethical character of workers.

LITERATURE REVIEW

About Learning Management System (LMS)

Online learning, better known as e-learning, has been developed for approximately 20 years by various institutions, especially educational institutions (Ibrahim et al., 2018). E-learning is defined as the use of internet connections to improve the delivery of learning materials, communication, and collaboration between students and teachers in a virtual environment (B. C. Lee et al., 2009). The integration of education and technology has made e-learning a powerful and effective learning medium that supports the teaching and learning process (Al-Fraihat et al., 2017). Over time, e-learning has become mainstream in the world of education and is widely adopted not only in formal educational institutions but also in organizations and companies as part of their human resource training (Iqbal et al., 2025; Noe et al., 2014; Salas et al., 2012; Sanderson, 2002; Welsh et al., 2003) and development strategies and even in learning outside

the context of formal education (Indrayani et al., 2024; Sacristano et al., 2025; Suartama et al., 2024).

In its implementation, e-learning is generally supported by a Learning Management System (LMS) (Effendi & Hartono Zhuang, 2005). LMS provides various tools and functions, such as course management, online group discussions and chats, distribution of learning documents (lecture materials, homework, and assignments), uploading presentations and video clips, as well as course assessment and evaluation mechanisms, so that it can support a structured and systematic teaching and learning process (Fathema et al., 2015).

About Microlearning-LMS

Microlearning has attracted a lot of attention as a literature study on The Effects of Microlearning Taylor & Hung (2022) identified that microlearning is perceived as an easy-to-use, relevant, realistic, and user-friendly method. Yao & Ho (2024) also added that adult learners view microlearning as an effective, efficient, and interesting approach. In the context of professional learning, microlearning is considered one of the approaches that can bridge the needs of the private sector, which has limited time due to work, to obtain continuous and dialogical learning (Lohman, 2024). Microlearning involves learning in small steps supported by small blocks of content or activities (Sun et al., 2018); a form of e-learning that focuses on the delivery of skills-based and just-in-time knowledge in small units and short-term learning activities on small pieces of knowledge sourced from the web (Kovachev et al., 2011). Hug (2006) identifies seven key dimensions in microlearning, which form the basis for effectively designing this approach, namely time, curriculum, content, format, process, media, and learning models.

Microlearning can also be delivered through web-based platforms or mobile devices, which can be categorized as mobile learning—that is, instruction and interaction between students and teachers that takes place through mobile devices and wireless communication (Chung et al., 2019). This instructional approach provides a ubiquitous (anywhere accessible) learning environment and is the primary delivery format for microlearning to meet the demand for quick and easy access to information when needed (Taylor & Hung, 2022). Research from Lolang & Putra Pratama (2025) confirms that the integration of microlearning into LMSs increases the flexibility and effectiveness of the learning process. Studies show that most microlearning studies are still limited to specific training fields, particularly computing, medicine, and healthcare (Sankaranarayanan et al., 2023; Taylor & Hung, 2022). These findings reveal the need for empirical studies related to microlearning in other fields (Taylor & Hung, 2022).

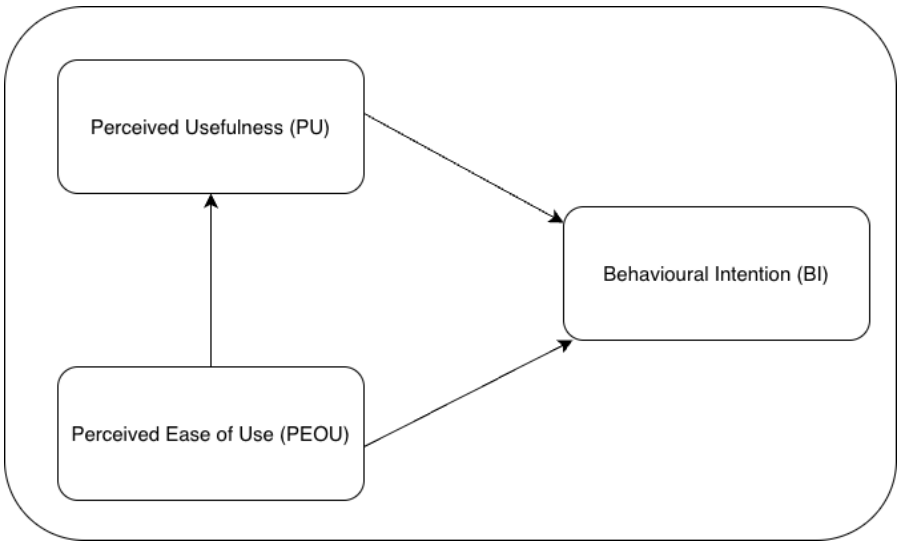
Technology Adoption using Technology Acceptance Model

Microlearning-LMS is a technological artifact (IT Artefact) whose success is largely determined by user technology adoption. According to Davis Jr (1986), the process of adoption and use of new technology by users can be analyzed through the Technology Acceptance Model (TAM). This model is the most widely used framework for researching user attitudes and intentions in adopting technology. This model is based on two main constructs to determine the acceptance of new technology by potential users, namely perceived usefulness (PU) and perceived ease of use (PEOU). PU and PEOU each describe the extent to which users believe that the system can improve performance and is easy to use.

The relationship between PEOU and PU, which are the main determinants of the intention to use the system (Behavioral Intention), is presented by Davis (1989) as a critical indicator of technology acceptance (A. T. Lee et al., 2025). Abdalla (2024) and Al-Fraihat et al. (2017) emphasize that acceptance and behavioral intention (BI) refer to the same individual readiness and are used interchangeably in many studies. Furthermore, Isibika et al. (2023) found that technology acceptance is conceptualized as an outcome variable of the psychological process that users go through when making decisions (intentions) to use or not use technology.

Research Framework and Hypotheses

Figure 1. Research Framework



Perceived Benefits in Microlearning-LMS

The adoption and use of information technology in the workplace remains a major concern in information systems research and practice (Sichel, 1997). TAM has consistently been able to explain and predict user acceptance of information technology in the workplace. TAM theorizes that a person's behavioral intention to use a system is determined by two main beliefs: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) (Venkatesh et al., 2003). Referring to Isibika et al. (2023), perceived benefits represent PU and PEOU.

Perceived Ease of Use (PEOU) is defined as an individual's belief that using a particular system requires minimal effort (Davis, 1989). In the context of this study, PEOU refers to the perception that using microlearning does not require much effort. This is also supported by the statement of (Rof et al., 2024) that microlearning is considered an attractive learning approach due to a number of factors, some of which are ease of access to knowledge and time flexibility. The short duration of microlearning is considered very useful for students who have difficulty concentrating for long periods of time (Bryzgalina et al., 2021). Lohman (2024) also highlights that with the time constraints of workers, microlearning can be a solution because it can provide structured learning in a short time. Many studies have recognized a positive correlation between PEOU and PU (Venkatesh et al., 2003).

H1: PEOU has a significant relationship with PU

Behavioral Intention in Microlearning-LMS

The success of microlearning greatly depends on the motivation to learn independently, which is seen from individuals' perceptions of the likelihood that they will use a system, known as Behavioral Intention. A lack of motivation on the part of learners can lead to poor acceptance of microlearning lessons (Ogange & Mishra, 2021). Several models focusing on technology acceptance have examined the antecedents of Behavioral Intention (BI), with Perceived Usefulness (PU) being the most widely researched and accepted element along with Perceived Ease of Use (PEOU) (Deng & Yu, 2023). BI is influenced by PU and PEOU. PEOU has a direct and indirect influence on BI through PU (Jai Lamimi., et al, 2024). n a study on the evaluation of the use and potential of microlearning in the TikTok application in higher education, Conde-Caballero et al. (2024) found that PU and BI values were positive because microlearning can support participants in taking exams.

H2: PEOU has a significant relationship with Behavioral Intention

H3: PU has a significant relationship with Behavioral Intention

METHODS

Research Design and Participant Selection

To evaluate the behavior intention of microlearning-based instruction, this study applied a quantitative survey design utilizing primary data collection with a Likert scale (1-5). The population characteristics specifically focused on adults (aged > 18 years) across sectors in Indonesia who are integrated into the child protection and Human Rights ecosystems. This approach refers to the principle ofprinsip Lohman (2024) , which posits that the measurement of microlearning success must be aligned with the preferences and workplace realities of the learners.

The population framework was representatively drawn from private sectors committed to human rights, encompassing 30 member entities of the Association of Child-Friendly Companies in Indonesia (APSAI) and 149 entities of the Indonesia Global Compact Network (IGCN), as well as reaching grassroots non-profit communities. Based on this total population reference, the minimum sample threshold was calculated to reach 64 respondents, assuming a 95% confidence level and a 10% margin of error using Slovin's formula.

The instrument was distributed using a purposive sampling technique, where participant selection was not based on random probability, but rather on expertise, experience, and direct relevance to child protection issues (Rai N & Thapa B, 2015). Respondent eligibility was screened through five strict inclusion criteria: (1) a track record of participation in e-learning platforms themed around human rights, gender, or child protection; (2) affiliation with private sectors operating at the intersection of child issues; (3) involvement in corporate social responsibility (CSR/ESG) programs; (4) participation in communities promoting human rights due diligence; and/or (5) a history of offline or online training related to child protection.

Data Analysis Procedures

The theoretical model of microlearning acceptance in this study was tested using Partial Least Squares Structural Equation Modeling (PLS-SEM) through the SmartPLS software. This variance-based approach was selected not only for its flexibility with non-normally distributed data but also for its effectiveness in predicting causal relationships (dependent latent constructs) in complex structural models (Hair et al., 2011, 2022).

The PLS-SEM algorithm testing was executed in two main stages. First, the measurement model (outer model) was evaluated to ensure the instrument possessed a high degree of precision. Indicator validity was measured by achieving a Loading Factor > 0.7 and an Average Variance Extracted (AVE) > 0.5, while the consistency of the measurement tool's reliability was confirmed through the thresholds of Cronbach's Alpha and Composite Reliability (CR) ≥ 0.700. Second, the structural model (inner model) was evaluated to test the hypothesis predictions among latent variables. The explanatory power of the model was assessed from the R Square score (classified as: strong > 0.67; moderate > 0.33; weak > 0.19), while the significance of the hypothesized relationships was confirmed through the Path Coefficient direction, T-Statistics value (≥ 1.96), and p-value probability (< 0.05).

Result and Discussion

Result

Participant Demographic Characteristics Results

Overall, data collection in this study successfully gathered participation from 136 individuals reflecting the diversity of actors within the child protection landscape. The distribution of respondents indicated a dominance of representatives from civil society organizations (non-profit sector) at 42% or 57 individuals, followed by professionals from business entities (private sector) with a proportion of 29% or 40 individuals. Furthermore, this evaluation also accommodated voices from groups outside the formal workforce—such as university students interested in child protection issues, corporate interns, and youth community mobilizers—totaling 31 respondents (23%), complemented by 8 representatives from the government sector (6%).

In addition, although these youth and student groups do not yet have formal status as frontline professionals, they are involved because they are actively integrated into the child protection and human rights ecosystem. As interns and community activists who deal directly with these issues, they face the real-world complexities of child protection advocacy, which requires continuous learning. Moreover, they are also ensured to meet strict inclusion criteria in sample selection, such as having a track record of participation in child protection-related training or being active in human rights advocacy communities. Empirical evidence from this profile distribution confirms that the evaluated microlearning intervention design has a comprehensive reach across a spectrum of cross-sector stakeholders, accommodating not only established professionals but also prospective social workers and indirect actors who hold vital positions in instilling child protection values.

Measurement Model Evaluation

The analysis results in Table 1 show that all indicators have outer loading values above the recommended threshold (≥ 0.70), indicating that each indicator adequately reflects its latent construct. For the Perceived Ease of Use (PEOU) construct, loading values ranged from 0.744 to 0.892. The indicator with the highest contribution is PEOU5 (0.892), confirming that the flexibility of learning control is a dominant aspect in shaping the perception of ease of use. For the Perceived Usefulness (PU) construct, loading values ranged from 0.780 to 0.923, with PU2 (0.923) and PU1 (0.900) as the strongest indicators, reflecting the importance of perceived improvements in productivity and learning performance. Meanwhile, the Behavioral Intention (BI) construct exhibited very high loading values across all indicators (0.911 and 0.913), signifying that the intention to use and the recommendation of the system strongly represent the construct.

Table 2 shows that the internal reliability of the constructs was evaluated through Cronbach's alpha values, where BI (0.797), PEOU (0.876), and PU (0.921) all exceeded the minimum threshold of 0.70. This finding indicates that the indicators for each construct possess good internal consistency. The Composite Reliability (CR) values also confirmed construct reliability, with BI (0.797), PEOU (0.886), and PU (0.929) being above the recommended threshold (≥ 0.70). Convergent validity was further reinforced by very high Average Variance Extracted (AVE) values: BI (0.908), PEOU (0.910), and PU (0.941). AVE values exceeding 0.50 indicate that the constructs can explain a substantial proportion of the indicators' variance. The high AVE values in this study imply that the indicators have a very strong ability to reflect the measured latent constructs. Overall, the measurement model evaluation results confirm that the research instrument meets the criteria for convergent validity and internal reliability, thus making it suitable for structural model analysis.

Table 1. Outerloading Result

Construct		Outer loadings	Status
Perceived Ease of Use (PEOU)	**PEOU1** (Child protection micro e-learning is easy for me to use)	0.844	Valid
	PEOU2 (Interacting with child protection materials in micro e-learning does not require much mental effort from me)	0.744	Valid
	PEOU3 (I can easily remember the child protection materials delivered in micro e-learning)	0.766	Valid
	PEOU4 (I participate in this child protection training because the e-learning materials are easily accessible)	0.837	Valid
	PEOU5 (The control over this child protection training allows me to learn whenever necessary)	0.892	Valid
Perceived	**PU1** (The micro format in the child protection	0.900	Valid

Usefulness (PU)	training accessed through micro e-learning can improve my learning performance)		
	PU2 (Participating in child protection training through micro e-learning increases my productivity)	0.923	Valid
	PU3 (Participating in child protection training through micro e-learning increases my efficiency at work)	0.886	Valid
	PU4 (The micro delivery of content in the child protection training that I access through micro e-learning improves my memory of the skills and knowledge learned	0.865	Valid
	PU5 (The child protection training materials developed in micro format through e-learning reduce the time and effort required to learn about business and child protection)	0.780	Valid
Behavioral Intention (BI)	**MA3** (I will recommend the use of this micro e-learning to my relatives who want to learn about child protection)	0.911	Valid
	MA5 (I will prefer taking micro-formatted training integrated into e-learning in the future)	0.913	Valid

Table 2. Cronbach's alpha, Composite reliability dan Average variance extracted (AVE) Result

	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Behavioral Intention (BI)	0.797	0.797	0.908
Perceived Ease of Use (PEOU)	0.876	0.886	0.910
Perceived Usefulness (PU)	0.921	0.929	0.941

Coefficient Determination (R-Square)

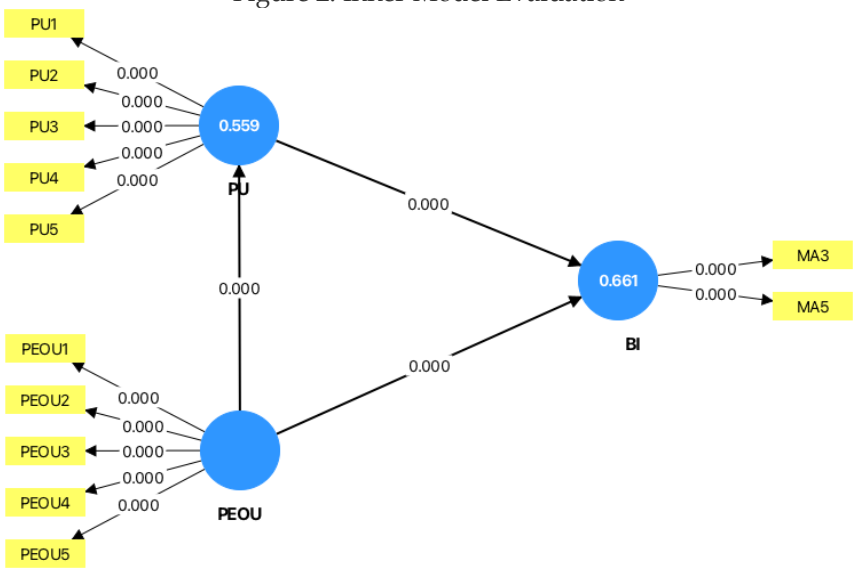
The evaluation of the structural model was conducted by assessing the coefficient of determination (R^2) to measure the predictive capability of the exogenous constructs on the endogenous constructs. Table 3 shows that the Behavioral Intention (BI) construct has an R-square value of 0.661 and an adjusted R-square of 0.656. This finding indicates that Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) collectively explain 66.1% of the variance in Behavioral Intention. Based on general criteria in PLS-SEM, this value can be categorized as moderate to strong, indicating that the model has good explanatory power regarding learners' behavioral intentions to use microlearning-based e-learning. Meanwhile, the Perceived Usefulness (PU) construct shows an R-square value of 0.559 and an adjusted R-square of 0.555. This implies that Perceived Ease of Use (PEOU) can explain 55.9% of the variance in Perceived Usefulness. This value reflects a moderate level of explanatory power, indicating that perceived ease of use plays a substantial role in shaping the perceived usefulness of the system. The minimal difference between the R-square and adjusted R-square values for both constructs suggests that the model does not experience significant estimation bias due to the number of predictors, meaning the stability of the structural model can be considered good. Overall, the obtained R-square values indicate that the applied TAM model has adequate predictive capability in explaining the perceptions and usage intentions of Microlearning-LMS.

Table 3. R-Square Result

	R-square	R-square adjusted
Behavioral Intention (BI)	0.661	0.656
Perceived Usefulness (PU)	0.559	0.555

Hypotheses Testing

Figure 2. Inner Model Evaluation



The structural model testing was conducted by analyzing the path coefficients, t-statistics, and p-values (Table 3). The estimation results show that all relationships between constructs are statistically significant. The relationship between PEOU and Perceived Usefulness (PU) shows a path coefficient of 0.747 with a t-statistic of 18.663 ($p < 0.001$). This result indicates that PEOU has a very strong positive effect on PU. In other words, perceived ease of use substantially increases the perceived usefulness of the system. Furthermore, the relationship between Perceived Ease of Use (PEOU) and Behavioral Intention (BI) has a path coefficient of 0.558 with a t-statistic of 7.435 ($p < 0.001$). This finding shows that PEOU has a positive and significant effect on BI. This means that the higher the perceived ease of use of the microlearning-based e-learning system, the stronger the learners' intention to use it. Additionally, the relationship between PU and BI is also proven to be significant with a path coefficient of 0.306 and a t-statistic of 4.027 ($p < 0.001$). This finding indicates that perceived usefulness contributes positively to the behavioral intention to use micro e-learning. Overall, these results support all research hypotheses, where PEOU plays an important role both directly on BI and indirectly through PU.

Table 3. Path Coeffecients Evaluation

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
H1 (PEOU -> PU)	0.747	0.751	0.040	18.663	0.000
H2 (PEOU -> BI)	0.558	0.560	0.075	7.435	0.000
H3 (PU -> BI)	0.306	0.306	0.076	4.027	0.000

DISCUSSION

The findings of this study provide empirical support for the relevance of the Technology Acceptance Model (TAM) in explaining the acceptance of Microlearning-LMS in the context of professional training, particularly in the domain of child protection, as seen from

Behavioral Intention. Overall, the statistical results show four important points of convergence with the urgency and challenges outlined in the introduction.

Learning with the Microlearning-LMS Approach Addresses the Challenges of Training Fatigue and Fragmented Learning Patterns

Sitzmann & Weinhardt (2018)highlight that professionals, especially in the social services and child protection sectors, are prone to training fatigue due to conventional training models that require a significant time and commitment. This condition becomes even more problematic in the context of child protection, where professionals must continuously update their knowledge to respond to complex and sensitive case dynamics. The finding that Perceived Ease of Use (PEOU) has a positive and significant effect on Behavioral Intention (BI) shows that PEOU is a key factor in encouraging the intention to adopt digital learning systems among professional workers.

Strong PEOU indicators related to time flexibility and learning control show that microlearning can accommodate fragmented learning patterns that are common among workers with high workloads. This finding is relevant to Walsh et al. (2022) that child protection workers often face time constraints, emergency responsibilities, and high emotional pressure, making flexible training models an urgent need. These findings are relevant to research showing that PEOU significantly increase the intention to use e-learning systems in professional contexts (Al-rahmi et al., 2021).

These results are consistent with Lohman's (2024) study, which confirms that microlearning is effective for adult learners because it supports quick, flexible access that fits their work rhythm. Adult learners at the university level in Singapore stated that this format allows them to integrate learning into their daily routines, and a significant number of respondents recommend microlearning as an effective learning method (Yao & Ho, 2024). In the field of health, Orwoll et al. (2018) showed that the implementation of microlearning to reduce Central Line-Associated Bloodstream Infections (CLABSI) successfully lowered infection rates after one year, encouraging participating hospitals to develop more than ten additional *microlearning* videos through a social collaboration system. Meanwhile, a pilot study in Tennessee, USA, showed a significant improvement in knowledge, attitudes, and practices of antimicrobial stewardship among nurses who took *an* asynchronous microlearning-based course for continuing health education (Bobbitt et al., 2023).

The integration *of* microlearning into digital platforms has been proven to not only increase learning effectiveness (Sulistiyani et al., 2024) but also increase participant engagement (Muali & Karlina, 2025). In the study by Muali & Karlina (2025), the integration of microlearning into digital platforms significantly contributes to increasing student engagement due to its flexible and easily accessible nature. Muali & Karlina (2025) also refer to Isibika et al. (2023), who state that the application of microlearning in digital platforms helps accelerate students' understanding of content, reduces cognitive load, and improves memory retention.

Thus, the findings of this study reinforce the findings that microlearning not only offers technological flexibility but also addresses pedagogical needs in professional training in complex domains such as child protection. The PEOU of the system allows professionals to integrate learning activities into their work rhythms without adding excessive training burdens. In this context, Microlearning-LMS has the potential to be an effective instructional strategy to support continuous learning, strengthen professional competencies, and ultimately help bridge the gap between knowledge and practice in child protection efforts.

Microlearning Reduces Cognitive Load on Complex Material

Child protection is a highly complex domain involving legal, ethical, psychological, and social dimensions (Binford, 2023). This complexity requires learning strategies that are able to present material in a structured, focused, and easily digestible manner for professional learners. This assumption is validated by the empirical findings of this study, which show that Perceived Ease of Use (PEOU) has the strongest influence on Perceived Usefulness (PU). This relationship indicates that when a microlearning system is perceived as easy to use, learners can focus their cognitive resources on understanding the substance of the material, rather than on the process

of operating the technology. Thus, the ease of system interaction functions as a cognitive enabler that strengthens the perception of learning usefulness.

These findings are consistent with Sweller's(2024) Cognitive Load Theory , which states that simple and focused instructional design can reduce extraneous cognitive load, allowing working memory capacity to be optimally utilized for processing essential information. In the context of technology-based learning, the relationship between cognitive load and technology acceptance has also been examined in various studies. Maričić et al. (2025), for example, state that there is a causal relationship that is between a construction of Cognitive Load Theory (CLT) with the Technology Acceptance Model (TAM) in which high perceived cognitive load can affect users' PEOU and PU of technology-based learning systems. Nur Morat et al. (2024) also added that cognitive load can emerge as a factor that influences the technology acceptance process (as measured by TAM), thus necessitating the design of learning materials that minimize mental overload and maximize learning efficiency.

In this context, the integration of interactive features in microlearning platforms is an important element in helping learners process complex material more effectively. Elements such as gamification, scaffolding, or interactive simulations can support the understanding process by breaking down complex material into more manageable learning units, thereby reducing the mental computational load involved in processing the highly complex material on child protection. Previous studies have shown that integrating interactive elements into digital learning can reduce cognitive load while increasing learner engagement, thereby facilitating understanding of complex and abstract content (Baah et al., 2024; Chang & Yang, 2023; Lehikko et al., 2024).

The concise, modular, and specific characteristics of microlearning contribute to simplifying this cognitive load, especially when learning complex and sensitive material such as child protection. These results are also supported by various studies showing that the PEOU of digital learning systems has a significant influence on perceptions of the usefulness of technology. When the system interface is designed to be simple and easy to operate, users can immediately engage with the learning content without experiencing technological friction, thereby increasing their evaluation of the benefits of the system (Santini et al., 2025; Şimşek et al., 2025). In the context of professional training, this condition is crucial because cognitive efficiency and clarity of interaction determine the quality of the learning experience and the effectiveness of knowledge transfer to work practices.

Microlearning-LMS is a Relevant Approach to Addressing Knowledge Gaps

The finding that PU has a significant effect on BI confirms that professional learners will adopt Microlearning-LMS continuously when the system is perceived to provide tangible benefits for their work. These results are in line with the research by Deng & Yu (2023),which shows that perceived benefits are the main predictor of intention to use learning technology. In research on the acceptance of microlearning, Isibika et al. (2023) also found a positive relationship between the PU variable and the acceptance of microlearning as a learning approach, particularly in the context of professional training and development.

In the context of professional training, the perceived benefits of a learning system are generally related to increased competence, work efficiency, and relevance to the real tasks encountered in professional practice (Martin, 2022). This is particularly important in the domain of child protection, where professionals often have to deal with complex situations involving legal and ethical considerations and child welfare within a limited time frame. The characteristics of adult learners who are oriented towards problem solving and practical application make the perception of usefulness an important factor in encouraging the adoption of learning technology. Microlearning-LMS designed based on cases and work experience enables a more contextual and relevant learning process for the situations faced by professionals in the field (Cronin & Durham, 2024).

In a dynamic work environment, professional learning is also shifting towards a continuous learning model that is integrated with daily work activities. This is in line with the needs of child protection professionals who are required to continuously update their knowledge regarding regulations, intervention strategies, and trauma-informed approaches.

Microlearning-LMS supports this approach by providing short materials that can be accessed *just-in-time*, so that individuals can quickly acquire knowledge when faced with immediate practical needs (de Gagne et al., 2019). Thus, the design of Microlearning-LMS needs to emphasize not only the conciseness of the material, but also its contextual and practical relevance in order to bridge the gap between conceptual knowledge and professional practice in addressing child protection issues.

Evaluation of TAM in *Microlearning* in the Context of Professional Training

Previous research on TAM has been dominated by formal education settings, particularly among university students (A. Granić & Nikola Marangunic, 2019). This study expands that context by highlighting professional learners who have different characteristics, such as time constraints, work pressure, and a pragmatic orientation toward learning that is relevant to their job needs. The finding that Perceived Ease of Use (PEOU) contributes more to Behavioral Intention (BI) than Perceived Usefulness (PU) provides new empirical evidence that enriches the TAM literature in the context of professional learning. These results indicate that for professional workers, the PEOU of a system is an important factor because learning activities must be adapted to the dynamic rhythm of work, so that TAM remains a strong theoretical framework for explaining the adoption of learning technology in various educational contexts, as emphasized in the research by Santini et al. (2025).

These findings are also in line with the study by Lamimi et al. (2024),which emphasizes that PEOU has a direct influence on BI. In the context of using technology that is not institutionally mandated, users tend to consider the ease of use before deciding to use a system (Venkatesh & Bala, 2008). This becomes even more relevant in a voluntary learning environment, where the decision to use a learning platform is highly dependent on user preferences and experiences.

Research on the adoption of educational technology also shows that PEOU plays an important role in increasing users' acceptance of digital technology (Scherer et al., 2019). In the context of professional learning, learning systems that are quickly accessible, easy to understand, and do not interfere with daily work activities are more likely to be adopted by users (de Gagne et al., 2019). 3). Therefore, the findings of this study confirm that in the design of microlearning for professional training, the aspect of ease of use not only functions as a technical factor, but also as a strategic factor that enables the integration of learning activities into professional work routines.

This study offers a new contribution to the development of Technology Acceptance Model (TAM) literature by testing it in the context *of* voluntary professional learning. Most previous TAM studies have focused on formal educational settings, particularly students who use e-learning systems as part of their academic obligations. In contrast to this context, this study places professionals from various sectors, including frontline professionals and community leaders, in a sensitive social domain—namely, child protection—as the subjects of research. In this environment, participation in digital training is not always mandatory, but rather depends more on individual motivation and their perceptions of the ease and relevance of the learning system.

The findings show that Perceived Ease of Use (PEOU) contributes more significantly than Perceived Usefulness (PU) in shaping Behavioral Intention to use Microlearning-LMS. These results enrich the TAM literature, which previously found that Perceived Isefulness (PU) is the main determinant of technology adoption intention as stated by Davis (1989). The dominant role of PEOU in this study indicates that in the context of voluntary professional learning, with time constraints and high workloads, ease of use and flexibility of access are key prerequisites before users consider the instructional benefits of the learning technology. Thus, this study provides a new perspective on the dynamics of digital learning technology adoption in the professional learning ecosystem.

Conclusion

This study concludes that Microlearning-LMS is empirically an effective instructional design innovation in facilitating continuous learning for a wide range of stakeholders, both professional workers and prospective social practitioners, in the field of child protection.

Evaluation using the Technology Acceptance Model (TAM) framework shows that Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) play a role as the main cognitive determinants that significantly influence behavioral intention to adopt the learning platform. The main findings of this study confirm that PEOU has a more dominant influence than PU in shaping adoption intentions. For professional learners who face high workloads, emergency responsibilities, and potential training fatigue, flexibility in controlling learning time and an intuitive system interface are crucial factors. This PEOU of operation has been proven to support the reduction of cognitive load, allowing learners to focus their mental resources on understanding complex and sensitive material, including legal, ethical, and psychological aspects of child protection.

The results of this study reinforce the argument that the success of digital learning innovation in a professional context is determined not only by the quality of the content, but also by the user experience. Perceptions of the ease of system interaction are an important prerequisite before learners assess its instructional usefulness. Thus, microlearning that is designed to be simple, accessible, and contextually relevant has the potential to increase learning engagement while encouraging continuous adoption in professional work environments.

As a practical implication, e-learning system developers and human resource policymakers in various sectors need to prioritize simplicity of design, ease of navigation, and User Experience (UX) elements when designing training for adult learners. Professional training, especially in sensitive and high-risk domains, requires the harmonious integration of instructional design, daily task requirements, and the cognitive characteristics of learners. A responsive e-learning-based microlearning approach to the dynamics of professional work is projected to be an adaptive strategy to support competency strengthening while bridging the gap between knowledge and child protection practices in Indonesia.

This study contributes both theoretically and practically. Theoretically, this study enriches the literature on digital learning innovation, particularly in the context of microlearning-based instructional design and technology acceptance in professional education. Using the Technology Acceptance Model (TAM) framework, this study provides a deeper understanding of the factors that influence users' acceptance of learning technology. In addition, the findings of this study also reinforce the argument that the success of digital learning implementation is not determined solely by the quality of the content presented, but is also greatly influenced by aspects of user experience (UX), such as ease of use, ease of navigation, and user engagement in the learning process.

In practical terms, this research offers innovative microlearning designs that can be used as a more adaptive and applicable learning approach in professional capacity building. This approach is expected to not only help transfer conceptual understanding to training participants, but also encourage reflective practices and strengthen professional ethical values, especially for frontline workers who handle child protection cases. Thus, the learning design resulting from this research has the potential to be an effective model for improving the quality of training and professional practices in the field of child protection.

This study has several limitations that need to be considered when interpreting the findings. First, the research design used is cross-sectional, so measurements are only taken at a single point in time. Therefore, this study focuses more on measuring usage intentions or adoption intentions toward a system or platform, rather than the actual level of sustained usage in daily practice. This condition means that the study cannot capture the dynamics of usage behavior longitudinally, including changes in attitude or consistency of use over time.

Second, the analytical model used in this study still has limitations in terms of the scope of variables tested. The evaluation model mainly focuses on two main constructs in the Technology Acceptance Model (TAM) framework, namely perceived ease of use (PEOU) and perceived usefulness (PU). Although these two variables have been proven to be important in explaining technology acceptance, this study has not included other external variables that could potentially influence participation or use of the platform, such as social factors, organizational support, digital literacy, and work environment conditions. Thus, further

research is recommended to develop a more comprehensive model by including additional variables in order to provide a broader understanding of the factors that influence technology adoption and use.

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