Tarbawi: Jurnal Ilmu Pendidikan
p-ISSN: 1858-1080|e-ISSN: 2615-6547
Vol. 20, No. 2, December 2024, 168-180

Learning Engagement in Online Professional Development Program: Indonesian University Lecturers' Insights

Tri Wintolo Apoko, Benny Hendriana, Isnaini Handayani, Isa Faqihuddin Hanif, Arum Fatayan, Irdalisa

Universitas Muhammadiyah Prof, Dr. Hamka, Jakarta, Indonesia
E-mail: triwin_apoko@uhamka.ac.id

Abstract. *Online professional development (PD) programs have become integral to educators' lifelong learning, offering opportunities for continuous improvement beyond traditional face-to-face training. However, research is scarce addressing the behavioral, emotional, and cognitive dimensions of engagement in online programs tailored for higher education professionals. This study aims to investigate the extent to which online professional development programs contribute to Indonesian university lecturers' behavioral, emotional, and cognitive engagements. This research used a mixed method with a sequential explanatory design. The participants of this study are 555 university lecturers from diverse universities in Indonesia, both private and state universities, who attended an online training for improving basic skills in instructional techniques held by Universitas Muhammadiyah Prof. Dr. Hamka, Jakarta, Indonesia. The instruments used were the questionnaire distributed to all the participants and a semi-structured interview for selected participants. Data analysis included a descriptive analysis for quantitative data and a thematic analysis for qualitative data. The study results show that online PD programs can foster decisive behavioral, emotional, and cognitive engagements among Indonesian university lecturers. Qualitatively, it also unveils positive motivations in pedagogical aspects. Thus, it is recommended that online training for lecturers should be the program offered to lecturers in Indonesia to improve their professionalism, mainly in the teaching aspects continually.*

Keywords*: Behavioral Engagement, Cognitive Engagement, Emotional Engagement, Learning Engagement, Online Training*

INTRODUCTION

In recent years, the landscape of professional development has changed significantly toward a virtual environment. Online professional development programs have grown in popularity, providing teachers with greater flexibility and accessibility (Dille & Røkenes, 2021; Lay et al., 2020; Wynants & Dennis, 2018). This trend is being driven by technology advancements and an increased acknowledgment of the importance of continual learning and training among university lecturers. Some research have investigated the efficacy of online professional development in terms of content delivery, technology adoption, and overall learning outcomes (Dolighan & Owen, 2021; Fairman et al., 2022; Jacob & Centofanti, 2024). These studies illustrate the online platform's favorable influence on professional development, with many teachers in some contexts reporting improved skills and knowledge.

Online professional development (PD) programs have become an essential component of teachers' lifelong learning, providing chances for continuous improvement beyond traditional face-to-face training (Bates et al., 2016). Online PD has been around since the early 2000s, when distant learning technology allowed teachers to participate in asynchronous learning modules (Flinders, 2010). These early versions focused mostly on curriculum delivery through pre-recorded materials and written assignments. As technology evolved, the scope of online PD increased to include synchronous tools and interactive multimedia such as Zoom and G-Meets to promote collaboration and learning participation (Anene & Idiedo, 2023; Apoko, 2023).

Definitions of online PD differ, but most researchers stress the use of web-based platforms to offer professional learning experiences. Treacy et al. (2002) describes it as an organized program that provides Web-based learning opportunities to help teachers promote their knowledge, skills, and instructional methods, including learning programs, courses, workshops, educational resources, and online interactions with instructors, colleagues, and mentors through combining readings, activities, and facilitated, peer-to-peer shared discussions. According to Curtis (2017) and Uzorka et al. (2023), successful professional development should be fitted to the needs of teachers and aim to enhance student outcomes. Online professional development has grown in popularity in a variety of educational settings, including the United States and the United Kingdom, demonstrating its adaptability and scalability. In the United States, Zimmer & Matthews (2022) discovered that online professional development programs focused at improving technology integration in classrooms dramatically enhanced instructors' digital literacy. In contrast, European countries such as Turkey have emphasized subject-specific PD, notably in STEM subjects (Mumcu et al., 2022).

Implementations of online PD have shown variable degrees of success across sectors and nations. Almazova et al. (2020) emphasize the effective use of online professional development programs in higher education to enhance teaching methods and student performance. They discovered that these programs improved faculty engagement in pedagogical research, particularly in technology-enhanced learning contexts. Sancar et al. (2021) found that effective PD that includes assessment, duration, comprehensiveness, dissemination, context, support and control, and teamwork are more likely to foster long-term professional development. Despite the wealth of research into online learning such as how college students in China engaged in online courses (Y. Wang et al., 2022), the challenges of online learning to students in remote areas (Adedoyin & Soykan, 2023; Ferri et al., 2020), the effectiveness in university students (Apoko & Sya'ban, 2022), how the quality online PD predicted the learning engagement (Fütterer et al., 2024), and teachers' motivation in online PD (Apoko & Cahyono, 2024), there is still a significant gap in understanding the nuances of online professional development courses from the point of view of university teachers. However, much existing research is focused on broad findings rather than in-depth investigations of how these online platforms promote engagement in higher education.

Engagement, a key element of effective learning, is widely studied in traditional classroom environments, but less in virtual environments. In particular, there is a shortage of research into the behavioral, emotional and cognitive dimensions of online programs adapted to university teachers. Learning engagement is a vital aspect in determining the efficacy of any educational program on how people think, act, and feel, and engagement may be defined in three dimensions: behavioral, emotional, and cognitive (Fredricks et al., 2019). Behavioral engagement is defined as participants' active participation in learning tasks such as attending sessions, completing assignments, contributing, participating in class discussions, participation in academic and co-curricular activities, time spent on work, and persistence and resiliency when faced with difficult tasks (Kahu, 2013). Emotional engagement includes learners' emotional reactions such as enthusiasm, frustration, happiness, pride, joy, openness, excitement, and curiosity (Bowden et al., 2021), while cognitive engagement focuses on the depth of the investment in learning material, the positive attention and interest in tertiary communication, and the strategy use of academic activities (Halverson & Graham, 2019).

Engagement has an influence on learning outcomes, according to research conducted in a variety of online educational environments. According to research by Dunn & Kennedy (2019), 524 undergraduate students who indicated high levels of engagement demonstrated increased academic performance. Moreover, better assessment scores in courses also could be earned by students with high engagement (Hussain et al., 2018). Thus, higher education places a strong emphasis on cognitive engagement since it fosters problem solving thinking and deeper learning (M. Wang et al., 2018). In situations involving professional development, engagement is equally vital. According to research by (Cents-Boonstra et al., 2021), teachers who demonstrated high levels

of behavioral engagement during lesson sessions were more likely to activate their students by offering the opportunities for experimenting and motivations while their working on tasks in classrooms.

The significance of increasing engagement in online learning settings has been extensively acknowledged. Hollister (2022) noted that undergraduate students found decreases in virtual lecture engagement and attendance, and this caused them to struggle with staying connected to their peers and teachers. However, research has shown that interactive and innovative gamified applications can increase engagement in creative learning skills (Zainuddin et al., 2020). Online professional development programs that emphasize collaborative activities, such as peer discussions and group projects, have greater levels of emotional and behavioral involvement (Pappas, 2015). Various digital tools have also been highlighted to promote students' behavior and emotional participation at undergraduate level, while graduate students' cognitive and emotional participation is mainly focused on shared experience and learning cooperation between students (Heilporn et al., 2021). Research on learning engagement in online professional development programs, particularly in higher education, has demonstrated the challenges of maintaining behavioral, emotional, and cognitive engagement. To respond to these challenges, Pacansky-Brock et al. (2020) proposed that it is important to humanize online courses in the professional development program, and faculty need to be immersed in online learning environments to foster emotional engagement such as feeling empathetic.

In Iraq, Al-Obaydi et al. (2023) surveyed 114 EFL third-year college students participating in an online courses and found that behavioral, emotional, and cognitive engagements were closely tied to the use of structured feedback during the program. Specifically, a study conducted by Asif et al. (2015) at a private institution of Karachi, Pakistan using the retrospective qualitative design of discourse analysis reported that there was a high level of cognitive engagement with positive role of faculty facilitation and felt more contented in participating through online learning environments. Moreover, Lai et al. (2021) surveyed 1002 students in 30 online classes at public and private universities in Taiwan. The findings revealed that motivations, perceived self-efficacy, and perceived teaching quality were important factors of university students' behavioral engagement in a flipped classroom model. In addition, from the interviews it was found that students had some tensions among types of learning, the boredom to the videos, not all the students participating in the discussion, and having no good interaction skills of teachers, and lack of time for students in class activities.

Another study by Mayordomo et al. (2022) was conducted at the Open University of Catalonia (UOC). This is an online university that offers undergraduate and graduate training. Because of its history and size, the UOC can be considered a representative case of an enormous online university. 191 students in all completed the intermediate (for the quasi-experimental group) and final (for the quasi-experimental group and control group) questionnaires; the former group allowed students to revise their assignments following feedback, while the latter group only received feedback at the conclusion of the assignment. The results demonstrate that there are no notable distinctions between the two groups' perceptions of the feedback. Nonetheless, the findings highlight how crucial feedback valence perception is in resubmission scenarios. Depending on how the input was interpreted in this case, a substantial association between emotional and cognitive engagement with the feedback was found.

The studies on online PD for teachers regarding learning engagement have been conducted a lot; however, the current study that is focused on the context of online PD in higher education attended by university lecturers throughout Indonesia and stressed on all the domains of learning engagement is still rarely. Thus, the main objective of this study is to examine how the online professional development environment contributes to university teachers' behavior, emotional and cognitive engagement. As a result, we aim to provide insights into how to optimize these virtual spaces and enhance professional growth. This study responds to the need for more research into teacher engagement in online learning environments, especially in higher education settings and

expect that Indonesian university lecturers would be more qualified and professional for the sake of pedagogical competence through online PD. The current study addresses the following key research questions:

(1) To what extent do online environments contribute to behavioral engagement in the professional development program?
(2) How do Indonesian university lecturers perceive emotional engagement in such programs?
(3) What are university lecturers' perspectives regarding their cognitive engagement in online professional development?

METHOD

Research design

This research employed a mixed method with a sequential explanatory design in which quantitative data for measuring the Indonesian university lecturers' voices on their engagement in online professional development programs through training on basic skills in instructional techniques (BSIT), and qualitative data are derived from how they were engaged in the online training. The choice of methodological design was based on what Creswell (2018) assumed that both kinds of data provided various types of information qualitatively and quantitatively.

Context and participants

The participants of this study are 555 lecturers from diverse universities in Indonesia, both private and state universities attending an online training for improving basic skills in instructional techniques (commonly abbreviated with PEKERTI training) held by Universitas Muhammadiyah Prof. Dr. Hamka, Jakarta, Indonesia. Table 1 reports the participant demographics and reveals the gender distribution is nearly equal, with 49.5% female and 50.5% male participants. Most participants are over 30 years old, with the majority falling in the 31-35 years (27.7%) and >40 years (36.6%) age brackets. Geographically, the majority of participants are from Java Island (77.7%), with smaller representations from other Indonesian islands such as Sumatera (12.1%) and Kalimantan (3.8%). The educational background is predominantly at the master's level (84.0%), with a smaller proportion holding doctoral degrees (16.0%). Regarding teaching experience, most participants have 1-5 years (53.0%), followed by 6-10 years (27.4%). A significant portion of the participants (72.8%) have never joined teaching training, and the most widely used digital application for teaching is Zoom (55.1%), followed by Google Classroom (18.0%). This demographic suggests a well-educated, geographically concentrated group with moderate teaching experience and a preference for widely accessible digital teaching tools.

Table 1. Demographics of participants

Categories	Sub-categories	Number	Percentage
Gender	Female	275	49.5%
	Male	280	50.5%
Age	<25 years old	3	0.5%
	25-30 years old	101	18.2%
	31-35 years old	154	27.7%
	36-40 years old	94	16.9%
	> 40 years old	203	36.6%
University Areas	Java island	431	77.7%
	Sumatera island	67	12.1%
	Kalimantan island	21	3.8%
	Sulawesi island	11	2.0%
	Bali and Nusa Tenggara	20	3.6%
	Maluku island	3	0.5%

	Papua	2	0.4%
Educational Background	Master degree	466	84.0%
	Doctoral degree	89	16.0%
Length of teaching experiences	<1 year	25	4.5%
	1-5 years	294	53.0%
	6-10 years	152	27.4%
	11-15 years	54	9.7%
	>15 years	30	5.4%
Ever joined teaching training	Yes	151	27.2%
	No	404	72.8%
Digital apps ever used for teaching	Zoom	306	55.1%
	G-Meet	53	9.5%
	Microsoft Teams	20	3.6%
	Moodle	47	8.5%
	Google Classroom	100	18.0%
	Edmodo	2	0.4%
	Others	27	4.9%

Design of online training on basic skills in instructional techniques

To prepare and anticipate the professionalism of university lecturers in Indonesia, the government of Indonesia through Directorate General of Higher Education announced some selected state and private universities to carry out a training on improving basic skills in instructional techniques for university lecturers in Indonesia to be qualified as certified lecturers. The modes offered can be offline, full online, blended, and hybrid learning. The online training program lasts six days within 17 courses to complete from 08.00 to 16.00, facilitated with a blend of Zoom for virtual or synchronous interactions and a Moodle-based Learning Management System (LMS) for asynchronous activities such as learning materials, doing assignments, and taking pre-test and post-test. The courses that participants need to learn include: foundations of education, policy of education in higher education, developing curriculum and lesson plans, instructional design, learning taxonomy, effective communication, building motivations, learning media to create, developing instructional materials, and learning assessment as well as teaching practice. Each course provides assignments to be completed by the participants within a week after the training ends. Those who fulfil the passing criteria such as their 100% participation, completing all the assignments, taking the post-test, and having a teaching performance would be awarded a certification of passing. This BSIT training has been identified as a program that would continually improve the competences of university teachers in Indonesia, especially in the aspects of pedagogical competence.

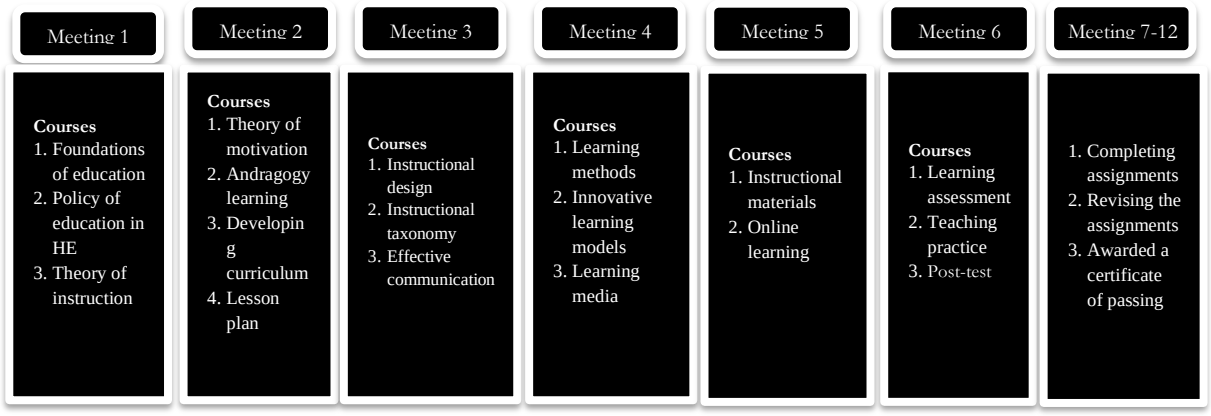

Figure 1. A step of implementing online training

Instruments and measures

In collecting quantitative data on the learning engagement in online training on basic skills in instructional techniques (BSIT), an online questionnaire was employed. The questionnaire was structured into two parts: the first one was about participants' information, while the second covered 15 questions with five options ranging from strongly disagree (1) to strongly agree (5) without any negative questions addressed to the participants. The questionnaire was adapted from (Mayordomo et al., 2022) that contain three dimensions: (1) behavioral engagement [1-6], (2) emotional engagement [7-9 questions], and (3) cognitive engagement [10-15 questions]. In addition to a questionnaire, a set of questions was used to interview nine selected university lecturers as the respondents. Each respondent has 10-15 minutes for the interview. The questions addressed to the nine university teachers are as follows:

(1) What motivates you to continue following each material session in the online training?
(2) How do you feel while participating in this online training?
(3) Are these training materials appropriate to your needs as a prospective professional lecturer? If yes/no, explain the reasons.
(4) What obstacles did you face while taking the online training at the university?

Data analysis

To analyze quantitatively the research questions, this study used a descriptive statistics analysis for the percentages, the mean, and the standard deviation, while analyzing qualitatively the research questions, a deductive thematic analysis was employed by identifying, analyzing, and reporting the themes of qualitative data gathered (Terry et al., 2017). In identifying themes, coding qualitative data such as interview transcripts is involved by segmenting the text into meaningful parts in line with the predetermined categories. Analyzing themes entails examining the coded segments to refine and group them into overarching themes. In the last phase, reposting themes involves presenting the results by describing each theme with quotes from interview data related to the research questions. The thematic results were then compared to the results from the descriptive statistics analysis.

FINDINGS

Behavioral engagement in online training

Table 2 on behavioral engagement in the online training indicates that 85.23% of participants strongly agreed (SA) that they focused on the training, and 86.13% believed the training could be utilized for career advancement, with a mean of 4.84 (SD = 0.41) and 4.85 (SD = 0.41), respectively. In terms of studying the materials in advance, 38.20% strongly agreed, and 19.10% were neutral, leading to a lower mean of 4.05 (SD = 0.94). Additionally, 72.43% strongly agreed they would practice what they had learned (Mean = 4.69, SD = 0.54), while 50.09% sought other relevant sources during training (Mean = 4.34, SD = 0.77). Lastly, 41.80% strongly agreed to responding to questions, though a higher 17.84% remained neutral, yielding a mean of 4.20 (SD = 0.80). The overall means ranged from 4.05 to 4.85, and the standard deviations from 0.41 to 0.94, reflecting varying degrees of behavioral engagement.

Table 2. Behavioral engagement in the online training

No	Questions	SD	D	N	A	SA	Mean	STDV
1	I tried to focus on the teaching training.	0.18%	0.00%	0.72%	13.87%	85.23%	4.84	0.41
2	The training that I attended can be utilized for career advancement.	0.00%	0.18%	1.26%	12.43%	86.13%	4.85	0.41
3	I study the training materials in advance.	1.44%	4.68%	19.10%	36.58%	38.20%	4.05	0.94

4	I will practice what I have learned in the training.	0.18%	0.18%	2.16%	25.05%	72.43%	4.69	0.54
5	I searched for other relevant sources/references when attending the training.	0.36%	1.62%	11.35%	36.58%	50.09%	4.34	0.77
6	I responded to every question and answer from my friends or instructor.	0.00%	2.16%	17.84%	38.20%	41.80%	4.20	0.80

Qualitative data analysis further demonstrates on the university lecturers' motivations regarding their behavioral engagement in the online training for their professional development. More participants highlighted a desire for deeper knowledge in education and teaching and found the training materials very useful and interesting that boosted class interaction and discussion engagement. In addition, curiosity about the training activities and appreciation were revealed, offering a cohesive learning experience. The interactive and non-monotonous delivery, including discussions and practice, further enhances engagement. The excerpts from the respondents are described below.

"I want to explore the knowledge of education and teaching more deeply so that I can become a lecturer who is more professional in his field and has better teaching skills so as to produce quality graduates". (Respondent 1)
"The reason why I continue to follow every course in the training is the need for the material. Online or offline delivery is not an obstacle. During my time as a lecturer, I have never received similar materials; while these materials are very important for teaching staff to improve their knowledge and ability to teach in order to be more creative and varied. It can help improve interactive in class and increase student engagement". (Respondent 3)
"What drove me to attend each session was my curiosity about training activities and the content of each subject that was reviewed in each session. Then, the material provided was different in each session, but after I followed it, each material correlated with each other, so I felt that this activity was interesting to follow. In each session, the presentation of the material was easy to understand, and the presenter involved participants in discussion and practice activities so that the activities became more varied and not monotonous". (Respondent 6)

Emotional engagement in online training

The data in Table 3 show that 84.32% of participants strongly agreed (SA) that they enjoyed participating in the training due to its support for lecturers' professionalism, resulting in a mean of 4.83 (SD = 0.42). Similarly, 83.96% strongly agreed they felt encouraged to continually master professional competencies through the training (Mean = 4.83, SD = 0.41). Enthusiasm in paying attention to discussions was slightly lower, with 69.01% strongly agreeing and 27.39% agreeing, yielding a mean of 4.65 (SD = 0.56). The overall mean for emotional engagement ranged from 4.65 to 4.83, with standard deviations between 0.41 and 0.56, reflecting strong emotional involvement in the training.

Table 3. Emotional engagement in the online training

No	Questions	SD	D	N	A	SA	Mean	STDV
7	I enjoyed participating in the teaching training because the training materials supported the development of the lecturers' professionalism.	0.00%	0.36%	0.72%	14.9%	84.32%	4.83	0.42
8	I feel encouraged to master the professional competencies of lecturers on an ongoing basis through teaching training.	0.00%	0.18%	0.72%	15.14%	83.96%	4.83	0.41
9	I am enthusiastic in paying attention to the ongoing discussion process.	0.00%	0.36%	3.24%	27.39%	69.01%	4.65	0.56

The qualitative data from the participants further emphasize the positive emotional engagement of the online training on basic skills in instructional techniques. It was found the participants' happiness over gaining new knowledge and experiences, particularly in conducting quality teaching aligned with the curriculum. Moreover, one university lecturer felt grateful for the opportunity to attend, noting that the one-week program had provided practical insights that have already influenced their classroom teaching. The qualitative analysis also highlighted a sense of motivation and enthusiasm during the online training, appreciating its relevance to their duties as a lecturer. Despite challenges with adapting to the online format, the respondent found the flexibility and accessibility of materials to be beneficial, supporting more comfortable and efficient learning. The following is the excerpts from some respondents.

"I feel happy because I have a lot of new knowledge, new experiences on how to carry out quality teaching, according to the applicable curriculum". (Respondent 2)
"I feel very grateful that I had the opportunity to participate in this training. I gained something valuable from this activity, and I feel blessed because after attending this activity for one week, I can apply the new things I received from this training in the learning process in the classroom. It is my hope that this will have a much greater positive impact on my learning process in the future". (Respondent 6)
"During the online training, I felt very motivated and enthusiastic. The material presented was very relevant to my duties and responsibilities as a lecturer, and the training provided new insights into effective learning strategies. Although there were challenges in adapting to the online format, I found the flexibility of time and accessibility of materials helpful, allowing me to learn more comfortably and efficiently". (Respondent 8)

Cognitive engagement in online training

Regarding cognitive engagement in the online training, Table 4 shows that 85.77% of participants strongly agreed (SA) that the training was relevant to their needs as prospective professional lecturers, resulting in a high mean of 4.84 (SD = 0.42). Regarding timely completion of assignments, 64.86% strongly agreed, while 29.73% agreed (Mean = 4.59, SD = 0.61). Active participation in asking questions and giving opinions was lower, with only 41.26% strongly agreeing and 18.56% remaining neutral (Mean = 4.17, SD = 0.84). Additionally, 73.33% strongly agreed that they sought new information to improve pedagogical competence (Mean = 4.72, SD = 0.50). A majority, 57.84%, also strongly agreed they tried to connect previous understanding with new material (Mean = 4.51, SD = 0.65). Lastly, 47.93% strongly agreed to asking questions when material presented differed from their understanding, though 13.15% remained neutral (Mean = 4.26, SD = 0.85). The overall means ranged from 4.17 to 4.84, with standard deviations between 0.42 and 0.85, reflecting varied levels of cognitive engagement.

Table 4. Cognitive engagement in the online training

No	Questions	SD	D	N	A	SA	Mean	STDV
10	Online training is relevant to my needs as a prospective professional lecturer.	0.00%	0.36%	0.90%	12.97%	85.77 %	4.84	0.42
11	I do well and on time all the assignments given by the training instructor.	0.18%	0.18%	5.05%	29.73%	64.86 %	4.59	0.61
12	I actively ask questions and give opinions during the training process.	0.54%	1.98%	18.56%	37.66%	41.26 %	4.17	0.84
13	I keep looking for new information related to the teaching training materials to improve my pedagogical competence.	0.00%	0.36%	1.08%	25.23%	73.33 %	4.72	0.50

14	I try to find connections between my understanding of previous material and the material I have learned in the training.	0.36%	0.54%	5.05%	36.22%	57.84 %	4.51	0.65
15	I ask the instructor if the material presented is different from what I understand.	0.72%	3.06%	13.15%	35.14%	47.93 %	4.26	0.85

The qualitative data analysis further reflects the university lecturers' perceptions in relation to the alignment of the training materials with their specific needs. This study revealed that the participants appreciate the comprehensive coverage of topics such as policies, curriculum, teaching techniques, and the use of media, all of which enhance their ability to deliver beneficial, student-centered instruction. Moreover, another participant without an educational background found the training valuable in understanding administrative tasks such as lesson plan preparation which were previously unfamiliar. Participants also underscored the relevance of the training in helping them implement effective pedagogical methods, enriching their knowledge of evaluation strategies and communication techniques. Below are the excerpts from the respondents.

"The material is in accordance with my needs as a prospective professional lecturer, such as providing a lot of knowledge about policies, curriculum, program plans in learning, media, and facilities needed in teaching, and good teaching techniques so that they can be accepted by students and benefit students who are taught. Students can know all materials according to their needs and can be applied by students when they graduate". (Respondent 4)
"Yes, the material in the training provided by the institution as the organizer is very suitable for my needs as a lecturer, especially perhaps for me, who did not have an educational background during undergraduate and graduate studies. I am a lecturer in the field of pure Mathematics and am not too familiar with the preparation of lesson plans, which is administrative, so this training gives me a better view and input in the implementation of learning". (Respondent 7)
"The materials are well suited to my needs as a lecturer. The content covers theories and practices relevant to teaching and learning, helping me understand and implement effective pedagogical methods. In addition, it also enriched my knowledge of evaluation strategies and communication techniques that are important in the academic world". (Respondent 9)

DISCUSSION

The findings on behavioral engagement highlight a strong commitment and motivation from participants in staying focused on online training and perceiving it as beneficial for career advancement. With more participants strongly agreeing to these aspects, it is evident that the participants were highly invested in the training. This aligns with prior research that shows the factors of online training in improving professional skills often result in higher engagement, such as the course design, motivation, and interaction opportunities during the training (Lai et al., 2021; Lee et al., 2021). However, a few participants studying materials in advance suggests a gap in proactive preparation, which may be addressed through structured pre-training tasks or incentives. While most participants intended to practice what they learned, only some participants strongly agreed they sought additional resources during the training, indicating room for fostering a more resourceful learning environment that is massive and open, such as MOOCs (Hew, 2016). While participants displayed consistent engagement, encouraging further preparatory and exploratory behaviors could enhance the depth of behavioral engagement.

In terms of emotional engagement, the results suggest that participants were highly motivated by the relevance of the training to their professional growth. The majority enjoyed the training and felt encouraged to continue developing their competencies. These findings align with research by (Apoko & Cahyono, 2024; Pacansky-Brock et al., 2020), who emphasize the importance of emotional engagement in fostering motivation and empathy in online learning environments. However, in relation to their enthusiasm during discussions, it is suggested that

while the training content was appreciated, interactive elements may need enhancement to maintain high emotional involvement throughout. Prior studies have highlighted that interactive and collaborative elements in online training can stimulate emotional engagement by fostering a sense of community and participation (Deng, 2021). Overall, incorporating more dynamic discussion formats could further enhance emotional engagement.

Finally, the results on cognitive engagement reveal that participants generally found the training highly relevant and made efforts to integrate new information into their pedagogical practice. As many participants strongly agree that the training met their professional needs and some of them actively sought new information, it is clear that the online training promoted cognitive engagement, aligning with prior findings that show the role of content-related materials in maintaining cognitive focus (Koszalka et al., 2021). However, active participation in asking questions and offering opinions was lower, and this indicates a need for strategies to stimulate more cognitive interaction. Studies such as those by Heilporn et al. (2021) have shown that cognitive engagement improves when learners are encouraged to participate actively in discussions or experience sharing. Additionally, encouraging learners to draw connections between previous knowledge and new material can further enhance deeper cognitive processing for gaining problem solving thinking skills (M. Wang et al., 2018). Thus, providing more opportunities for critical reflection and dialogue during the training could improve overall cognitive engagement.

CONCLUSION

The study demonstrates that online professional development training can foster strong behavioral, emotional, and cognitive engagement among university lecturers. The participants displayed significant behavioral engagement, particularly in focusing on the training and perceiving its relevance for career advancement, though some areas, such as proactive preparation, saw lower engagement. Emotionally, participants were highly motivated by the training's professional relevance, reflecting an appreciation for the materials provided. Cognitive engagement was also evident, with participants striving to integrate new knowledge into their pedagogical practice. However, there was a notable gap in active participation in discussions and question-asking, indicating a need for more interactive elements to enhance engagement. Despite these promising outcomes, the study has limitations. The self-reported data may introduce bias, as participants might have overstated their engagement levels. Additionally, the study's context on one group of universities limits the generalizability of the results to other educational contexts or professional fields. Future research should consider longitudinal studies to assess engagement over time and explore the impact of various training formats, such as blended learning, on engagement levels. Moreover, incorporating structured pre-training tasks and fostering more interactive learning environments could further enhance both behavioral and cognitive engagement.

ACKNOWLEDGEMENTS

The authors would like to thank the Institute of Teaching and Education Development, Universitas Muhammadiyah Prof. Dr. Hamka, for funding the research in 2024. They also appreciate the participants in the training of basic skills in instructional techniques (PEKERTI) 2023/2024 who were willing to complete the online survey.

REFERENCES

Adedoyin, O. B., & Soykan, E. (2023). Covid-19 pandemic and online learning: the challenges and opportunities. *Interactive Learning Environments*, *31*(2), 863–875. https://doi.org/10.1080/10494820.2020.1813180

Al-Obaydi, L. H., Shakki, F., Tawafak, R. M., Pikhart, M., & Ugla, R. L. (2023). What I know, what I want to know, what I learned: Activating EFL college students' cognitive, behavioral, and emotional engagement through structured feedback in an online environment. *Frontiers in Psychology*, *13*, 1083673. https://doi.org/10.3389/fpsyg.2022.1083673

Almazova, N., Krylova, E., Rubtsova, A., & Odinokaya, M. (2020). Challenges and Opportunities for Russian Higher Education amid COVID-19: Teachers' Perspective. *Education Sciences*, *10*(12), 368. https://doi.org/10.3390/educsci10120368

Anene, I. A., & Idiedo, V. O. (2023). Librarians participation in professional development workshops using Zoom in Nigeria. *Information Development*, *39*(1), 36–45. https://doi.org/10.1177/02666669211026714

Apoko, T. W. (2023). EFL Preservice Teachers' Intrinsic Motivation in Writing Essays in a Blended Learning Environment. *VELES (Voices of English Language Education Society)*, *7*(1), 126–134. https://doi.org/https://doi.org/10.29408/veles.v7i1.7838

Apoko, T. W., & Cahyono, B. Y. (2024). In-service English teachers' motivations in the Indonesian teacher profession education program. *International Journal of Evaluation and Research in Education (IJERE)*, *13*(4), 2639. https://doi.org/10.11591/ijere.v13i4.28442

Apoko, T. W., & Sya'ban, M. B. A. (2022). The impact of online learning implementation on satisfaction, motivation, quality of the learning process, and student learning outcomes. *AL-ISHLAH: Jurnal Pendidikan*, *14*(4), 5923–5932.

Asif, N., Vertejee, S., & Lalani, S. (2015). Interaction and Cognitive Engagement in Online Discussions in Professional Development Leadership and Management Course at a Private Nursing Institution. *Journal of Education and Training Studies*, *3*(6), 271. https://doi.org/10.11114/jets.v3i6.1024

Bates, M. S., Phalen, L., & Moran, C. (2016). Online professional development. *Phi Delta Kappan*, *97*(5), 70–73. https://doi.org/10.1177/0031721716629662

Bowden, J. L.-H., Tickle, L., & Naumann, K. (2021). The four pillars of tertiary student engagement and success: a holistic measurement approach. *Studies in Higher Education*, *46*(6), 1207–1224. https://doi.org/10.1080/03075079.2019.1672647

Cents-Boonstra, M., Lichtwarck-Aschoff, A., Denessen, E., Aelterman, N., & Haerens, L. (2021). Fostering student engagement with motivating teaching: an observation study of teacher and student behaviours. *Research Papers in Education*, *36*(6), 754–779. https://doi.org/10.1080/02671522.2020.1767184

Creswell, J. W. C. J. D. (2018). Research design: qualitative, quantitative, and mixed methods approaches. In *Sage* (5th ed., Vol. 53, Issue 9). Sage. http://www.elsevier.com/locate/scp

Curtis, A. (2017). Online Professional Development. In *The TESOL Encyclopedia of English Language Teaching* (pp. 1–7). Wiley. https://doi.org/10.1002/9781118784235.eelt0653

Deng, R. (2021). Emotionally Engaged Learners Are More Satisfied with Online Courses. *Sustainability*, *13*(20), 11169. https://doi.org/10.3390/su132011169

Dille, K. B., & Røkenes, F. M. (2021). Teachers' professional development in formal online communities: A scoping review. *Teaching and Teacher Education*, *105*, 103431. https://doi.org/10.1016/j.tate.2021.103431

Dolighan, T., & Owen, M. (2021). Teacher efficacy for online teaching during the COVID-19 pandemic. *Brock Education Journal*, *30*(1), 95. https://doi.org/10.26522/brocked.v30i1.851

Dunn, T. J., & Kennedy, M. (2019). Technology Enhanced Learning in higher education; motivations, engagement and academic achievement. *Computers & Education*, *137*, 104–113. https://doi.org/10.1016/j.compedu.2019.04.004

Fairman, J. C., Smith, D. J., Pullen, P. C., & Lebel, S. J. (2022). The challenge of keeping teacher professional development relevant. In *Leadership for Professional Learning* (pp. 251–263). Routledge. https://doi.org/10.4324/9781003357384-17

Ferri, F., Grifoni, P., & Guzzo, T. (2020). Online Learning and Emergency Remote Teaching: Opportunities and Challenges in Emergency Situations. *Societies*, *10*(4), 86. https://doi.org/10.3390/soc10040086

Flinders, D. J. (2010). *Curriculum and Teaching Dialogue: Vol. 12# 1 & 2*. IAP.

Fredricks, J. A., Reschly, A. L., & Christenson, S. L. (2019). *Handbook of student engagement interventions: Working with disengaged students*. Academic Press.

Fütterer, T., Richter, E., & Richter, D. (2024). Teachers' Engagement in Online Professional Development—The Interplay of Online Professional Development Quality and Teacher Motivation. In *Zeitschrift für Erziehungswissenschaft* (pp. 1–30). Springer. https://doi.org/10.31219/osf.io/rsgwb

Halverson, L. R., & Graham, C. R. (2019). Learner Engagement in Blended Learning Environments: A Conceptual Framework. *Online Learning*, *23*(2), 145–178. https://doi.org/10.24059/olj.v23i2.1481

Heilporn, G., Lakhal, S., & Bélisle, M. (2021). An examination of teachers' strategies to foster student engagement in blended learning in higher education. *International Journal of Educational Technology in Higher Education*, *18*(1), 25. https://doi.org/10.1186/s41239-021-00260-3

Hew, K. F. (2016). Promoting engagement in online courses: What strategies can we learn from three highly rated MOOCS. *British Journal of Educational Technology*, *47*(2), 320–341. https://doi.org/10.1111/bjet.12235

Hollister, B., Nair, P., Hill-Lindsay, S., & Chukoskie, L. (2022). Engagement in Online Learning: Student Attitudes and Behavior During COVID-19. *Frontiers in Education*, *7*, 851019. https://doi.org/10.3389/feduc.2022.851019

Hussain, M., Zhu, W., Zhang, W., & Abidi, S. M. R. (2018). Student Engagement Predictions in an e-Learning System and Their Impact on Student Course Assessment Scores. *Computational Intelligence and Neuroscience*, *2018*(1), 1–21. https://doi.org/10.1155/2018/6347186

Jacob, T., & Centofanti, S. (2024). Effectiveness of H5P in improving student learning outcomes in an online tertiary education setting. *Journal of Computing in Higher Education*, *36*(2), 469–485. https://doi.org/10.1007/s12528-023-09361-6

Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher Education*, *38*(5), 758–773. https://doi.org/10.1080/03075079.2011.598505

Koszalka, T. A., Pavlov, Y., & Wu, Y. (2021). The informed use of pre-work activities in collaborative asynchronous online discussions: The exploration of idea exchange, content focus, and deep learning. *Computers & Education*, *161*, 104067. https://doi.org/10.1016/j.compedu.2020.104067

Lai, H.-M., Hsieh, P.-J., Uden, L., & Yang, C.-H. (2021). A multilevel investigation of factors influencing university students' behavioral engagement in flipped classrooms. *Computers & Education*, *175*, 104318. https://doi.org/10.1016/j.compedu.2021.104318

Lay, C. D., Allman, B., Cutri, R. M., & Kimmons, R. (2020). Examining a Decade of Research in Online Teacher Professional Development. *Frontiers in Education*, *5*, 573129. https://doi.org/10.3389/feduc.2020.573129

Lee, J., Sanders, T., Antczak, D., Parker, R., Noetel, M., Parker, P., & Lonsdale, C. (2021). Influences on User Engagement in Online Professional Learning: A Narrative Synthesis and Meta-Analysis. *Review of Educational Research*, *91*(4), 518–576. https://doi.org/10.3102/0034654321997918

Mayordomo, R. M., Espasa, A., Guasch, T., & Martínez-Melo, M. (2022). Perception of online feedback and its impact on cognitive and emotional engagement with feedback. *Education and Information Technologies*, *27*(6), 7947–7971. https://doi.org/10.1007/s10639-022-10948-2

Mumcu, F., Atman Uslu, N., & Yıldız, B. (2022). Investigating teachers expectations from a professional development program for integrated STEM education. *Journal of Pedagogical Research*, *6*(2), 44–60. https://doi.org/10.33902/JPR.202213543

Pacansky-Brock, M., Smedshammer, M., & Vincent-Layton, K. (2020). Humanizing online teaching to equitize higher education. *Current Issues in Education*, *21*(2 (Sp Iss)). https://cie.asu.edu/ojs/index.php/cieatasu/article/view/1905/870

Sancar, R., Atal, D., & Deryakulu, D. (2021). A new framework for teachers' professional development. *Teaching and Teacher Education*, *101*, 103305. https://doi.org/10.1016/j.tate.2021.103305

Terry, G., Hayfield, N., Clarke, V., & Braun, V. (2017). Thematic analysis. *The SAGE Handbook of Qualitative Research in Psychology*, *2*(17–37), 25.
Treacy, B., Kleiman, G., & Peterson, K. (2002). Successful online professional development. *Learning and Leading with Technology*, *30*(1), 42–49.
Uzorka, A., Namara, S., & Olaniyan, A. O. (2023). Modern technology adoption and professional development of lecturers. *Education and Information Technologies*, *28*(11), 14693–14719. https://doi.org/10.1007/s10639-023-11790-w
Wang, M., Wu, B., Kirschner, P. A., & Michael Spector, J. (2018). Using cognitive mapping to foster deeper learning with complex problems in a computer-based environment. *Computers in Human Behavior*, *87*, 450–458. https://doi.org/10.1016/j.chb.2018.01.024
Wang, Y., Cao, Y., Gong, S., Wang, Z., Li, N., & Ai, L. (2022). Interaction and learning engagement in online learning: The mediating roles of online learning self-efficacy and academic emotions. *Learning and Individual Differences*, *94*, 102128. https://doi.org/10.1016/j.lindif.2022.102128
Wynants, S., & Dennis, J. (2018). Professional Development in an Online Context: Opportunities and Challenges from the Voices of College Faculty. *Journal of Educators Online*, *15*(1), n1. https://doi.org/10.9743/JEO2018.15.1.2
Zainuddin, Z., Shujahat, M., Haruna, H., & Chu, S. K. W. (2020). The role of gamified e-quizzes on student learning and engagement: An interactive gamification solution for a formative assessment system. *Computers & Education*, *145*, 103729. https://doi.org/10.1016/j.compedu.2019.103729
Zimmer, W. K., & Matthews, S. D. (2022). A virtual coaching model of professional development to increase teachers' digital learning competencies. *Teaching and Teacher Education*, *109*, 103544. https://doi.org/10.1016/j.tate.2021.103544