

Community of Inquiry Approach: The Meaning of Presence for MOOC Learning in Zoonoses Control Training

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ABSTRACT

Massive Open Online Course (MOOC) have become a flexible learning solution that is widely accessible. Drop Out is still a problem in MOOC learning. Many factors cause participants to choose not to continue their studies in MOOC, including limited study time and high workloads. The meaning of presence in online learning is often overlooked, even though it plays an important role in enhancing participant engagement and success. This study aims to describe the needs of MOOC participants for the meaning of presence in online learning, inspired by the community of inquiry framework. The survey was conducted with 150 graduates of Zoonoses Control Training. Data processing was conducted using Microsoft Excel to analyze the response patterns of participants. The research results show that the majority of participants responded positively to the meaning of presence in MOOC. Participants strongly agree that the cognitive presence, social presence, and teaching presence is needed in MOOC learning. These findings make an important contribution to the development of higher-quality MOOC by emphasizing the importance of creating a more inclusive and interactive learning environment. By understanding the meaning of presence in MOOC, course designers can create more engaging learning experiences and reduce dropout rates, thereby ensuring that online learning is more effective and sustainable.

Keyword: Community of Inquiry; MOOC; Zoonoses; Health Training.

INTRODUCTION

The existence of Massive Open Online Course (MOOC) can be an alternative solution to meet the massive need for improving the competencies of healthcare workers. Healthcare workers who are required to be ready to work under pressure when handling patients greatly need learning resources that can be accessed anywhere and anytime without limitations of space and time (Dwyer et al., 2022; Wang et al., 2021). This learning can be used to improve the performance of healthcare workers through training to address relevant health issues worldwide and the rapid need for skills and knowledge (Bendezu-Quispe et al., 2017). This learning can also reduce educational costs and expand the reach of high-quality educational resources (Sang et al., 2023). This learning opportunity allows for the implementation of more flexible, effective, and efficient (Neha & Kim, 2023). The existence of MOOC can have a broader impact on health training without being limited by the number of trainees who need to come to the training location.

Drop out is still a learning problem in MOOCs. Various studies have identified the causes of participants not completing courses, including the lack of social interaction and facilitator support, which makes participants feel disengaged from the learning process (Brisson et al., 2018). The lack of support and feedback in learning can cause participants to experience difficulties in evaluation and learning (Zhu et al., 2022). Additionally, low intrinsic motivation and difficulty in managing study time often hinder participants from completing the courses they have started (Chi, 2023). Another factor contributing to dropout is the weak self-regulation of participants, which includes a lack of effective learning strategies and the ability to manage their learning progress independently (Giasiranis & Sofos, 2020). In addition, the less interactive course design, the absence of gamification elements, and the lack of variation in the methods of delivering material also affect the course completion rate (MEDINA-LABRADOR et al., 2023). Various reasons for this dropout make the significance of presence in MOOCs very important to realize.

Community of Inquiry (CoI) serves as a framework that emphasizes the importance of presence in a meaningful online learning environment. This model consists of three main elements: cognitive presence, which reflects the extent to which participants are able to build deep understanding; social presence, which ensures social interaction and a sense of connection among participants; and teaching presence, which encompasses the instructor's role in designing, facilitating, and providing direction in learning (by Terry Anderson, n.d.; Garrison et al., 1999, 2001b, 2001a). In the context of MOOC, where interaction is often limited and participants learn independently, ensuring presence in these three dimensions becomes a unique challenge. Without strong presence, participants are more vulnerable to losing motivation, feeling isolated, and ultimately dropping out. Therefore, understanding the meaning of presence in MOOCs through the CoI framework is an important step in designing more effective, interactive, and inclusive learning experiences, thereby enhancing participant retention and the overall quality of online learning.

This research aims to describe the needs of MOOC users regarding the meaning of presence in online learning, referring to the Community of Inquiry (CoI) framework. This study contributes to mapping the needs of participants before the development of MOOC with a CoI approach, so that the developed learning design can better align with the characteristics, preferences, and expectations of users. Although many studies on MOOC focus on instructional design and learning effectiveness, there are still limitations in exploring the specific needs of participants before the course development process (Bagus Pambudi & Chandra Wibawa, 2020; Hidayat et al., 2023; Riche & Johan, n.d.). Therefore, this research provides a strategic contribution in ensuring that the development of MOOC is truly user-centered, by integrating practical experience in the implementation of Zoonoses Control training and utilizing the latest technology to enhance engagement and effectiveness in online learning.

RESEARCH METHOD

This research uses a quantitative approach with a survey method to analyze participants' needs in the development of MOOCs with a Community of Inquiry approach, which will be specifically applied in zoonosis control training. Participants who had previously attended online training at the Balai Besar Pelatihan Kesehatan (BBPK) Ciloto were invited to fill out the survey. The link was sent through a social media group

that directed participants to the survey sent via Google Forms. 150 respondents were willing to fill out the survey, with 23 respondents having dropped out of the MOOC learning.

The research instrument was developed based on the Community of Inquiry framework, which includes aspects of cognitive presence, social presence, and teaching presence. Introductory questions were provided to obtain initial information related to participants' drop-out experiences, the main causes of participants dropping out, and expectations for the future development of MOOCs. The research instrument to obtain participants' perceptions of the meaning of presence based on the CoI Framework was adopted from various previous studies that have been declared valid, reliable, and efficient (Borup et al., 2022a, 2022b; Duarte Parulla et al., n.d.; Kovanović et al., 2018; Mutezo & Maré, 2022; Norz et al., 2023; Valverde-Berrocoso et al., 2023). Each aspect was measured using closed-ended questions with a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree," to evaluate participants' perceptions of the meaning of teaching presence, cognitive presence, and social presence in MOOC learning. The collected data were analyzed using Microsoft Excel software to calculate frequency distributions, percentages, and visualize the results in the form of tables and diagrams.

RESULT AND DISCUSSION

The survey on the need for MOOC development was conducted over 1 week with a total of 150 respondents, of which 23 (15.3%) were known to have dropped out of the MOOC. The majority of respondents were female (62%) and most were in the age group of 41–50 years (35.3%). Most participants are bachelor's degree graduates (51.3%) and 74% of respondents reported working for more than 5 years (Table 1).

Table 1. Participant Characteristics

Variabel		Number of respondents N = 150		Number of Respondents who have ever dropped out N = 23	
		Frequency	Persent	Frequency	Persent
Gender	Male	57	38%	8	34.8%
	Female	93	62%	15	65.2%
Age Group	<20 Years	0	0	0	0
	21-30 Years	32	21.3%	1	4.3%
	31-40 Years	44	29.3%	9	39.1%
	41-50 Years	53	35.3%	8	34.8%
	>50 Years	21	14%	5	21.7%
Education	Diploma	16	10.7%	3	13%
	Bachelor's degree	77	51.3%	8	34.8%
	Master's Degree	57	38%	12	52.2%
Work Experience	< 1 Years	3	2%	1	4.3%
	1-3 Years	19	12.7%	0	0
	3-5 Years	17	11.3%	1	4.3%
	>5 Years	111	74%	21	91.3%

Furthermore, the researchers posed follow-up questions to MOOC participants who had decided to drop out. Figure 1 shows various reasons why participants decided to drop out of MOOC. As many as 77.3% of respondents expressed that difficulty in completing quizzes or other evaluations was the main factor. As many as 34.8% of participants cited lack of study time as their reason, while 30.4% others stated that the long duration of learning was an obstacle. Heavy workloads were reported by 21.7% of respondents, while 26.1% of participants faced obstacles due to the lack of responsive technical assistance. Too much material was a factor for 17.4% of participants, and 13% of respondents cited losing interest in the topic as the main reason for discontinuing their learning.

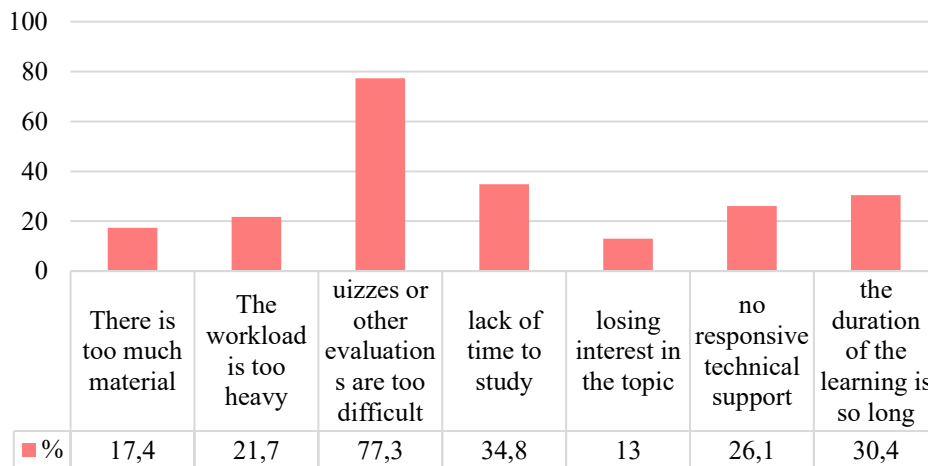


Figure 1. The Reasons participants decide to drop out of MOOC learning

Respondents who have ever dropped out desire a flexible schedule without strict deadlines as their main preference (77.3%). Focusing on visual materials, such as videos and infographics, is the choice for 54.5% of the participants. As many as 40.9% of respondents expect more interactive activities in learning, while 31.8% prefer a fixed schedule with a weekly structure. These findings indicate a tendency among participants to prioritize time flexibility and the use of visual media in enhancing the effectiveness of MOOC learning (Figure 2).

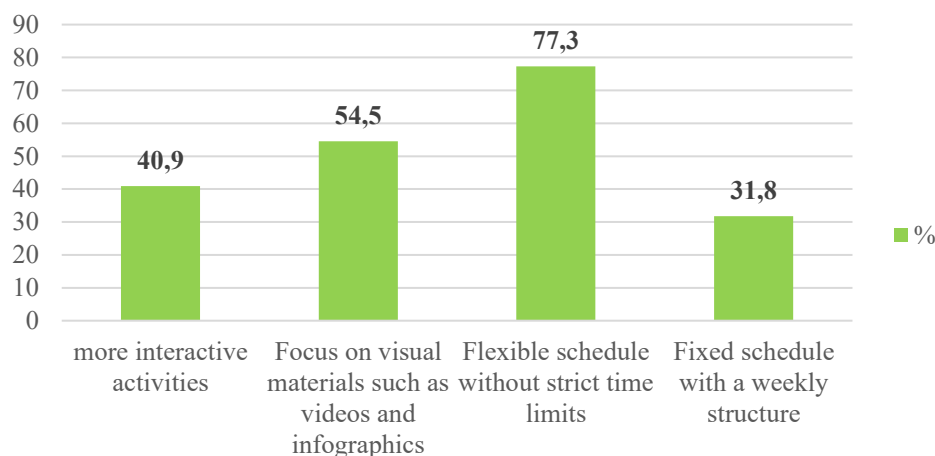


Figure 2. Expected Types of MOOC Learning Activities

The survey results regarding participants' attention to the meaning of cognitive, social, and teaching presence indicate that various important aspects related to the effectiveness of the learning platform in communicating information, building participant engagement, and supporting social interaction and learning reflection are needed.

Table 2. Participants' needs in the development of MOOC based on the Community of Inquiry instrumen

Statement	Score	%	Category
The platform communicates important topics clearly	637	84.9	Very High
The platform clearly communicates important course objectives	648	86.4	Very High
The platform provides clear instructions on how to participate in learning activities	645	86.0	Very High
The platform clearly communicates the date/time frame for learning activities	652	86.9	Very High
The platform was very helpful in identifying areas of Agreements and disagreements about course topics that helped me learn	626	83.5	Very High
The platform was very helpful in guiding the class to understand the course topics in a way that helped me clarify my thinking	635	84.7	Very High
The platform helps keep course participants engaged. and participate in productive dialogue	604	80.5	High
The platform helps keep course participants focused in a way that helps me learn.	633	84.4	Very High
The platform encourages course participants to explore new concepts in this course.	629	83.9	Very High
The platform strengthens the development of a sense of community among course participants.	612	81.6	Very High
The platform helps focus discussions on relevant issues in a way that helps me learn.	632	84.3	Very High
The platform provides feedback that helps me understand my strengths and weaknesses relative to the goals and objectives of the course.	627	83.6	Very High
The platform provides timely feedback	627	83.6	Very High
Getting to know other course participants gives me a sense of belonging in the training	599	79.9	High
I was able to form different impressions of some of the trainees	589	78.5	High
Online or web-based communication is an excellent medium for social interaction	610	81.3	Very High

Statement	Score	%	Category
I feel comfortable speaking through online media	601	80.1	High
I feel comfortable participating in course discussions	606	80.8	High
I feel comfortable interacting with other trainees	604	80.5	High
I feel comfortable disagreeing with other course participants while maintaining a sense of trust	577	76.9	High
I feel that my point of view is recognized by other trainees	580	77.3	High
Online discussions helped me develop a sense of collaboration	612	81.6	Very High
The problems I encountered increased my interest in issues in learning	631	84.1	Very High
The learning activity aroused my curiosity	635	84.7	Very High
I feel motivated to explore content-related questions	630	84.0	Very High
I made use of a variety of information sources to explore the issues posed in this course	630	84.0	Very High
Brainstorming and finding relevant information helps me resolve content-related questions	622	82.9	Very High
Online discussions have been invaluable in helping me appreciate different perspectives	619	82.5	Very High
Incorporating new information helps me answer questions that arise in learning activities	630	84.0	Very High
Learning activities help me develop explanations/solutions	627	83.6	Very High
Reflection on the course content and discussions helped me understand the basic concepts	618	82.4	Very High

Based on the survey results, participants need a MOOC learning platform that emphasizes the significance of teaching, social, and cognitive presence. In terms of the meaning of teaching presence, 86.9% of respondents need a platform that can clearly communicate dates/timelines for learning activities, while the need for explicitly conveying course objectives in the MOOC platform is very high. participants also need a platform that can help focus discussions on relevant issues tailored to the participants' learning styles (84.3%). The MOOC platform is also expected to encourage the exploration of new concepts (83.9%). In terms of social presence, the majority of participants feel comfortable communicating through online media (80.1%) and engaging in course discussions (80.8%). Furthermore, the MOOC platform should contribute to the development of a sense of community among course participants (81.6%) as well as support reflection and understanding of learning concepts (82.4%). In terms of cognitive presence, participants really need learning activities that can stimulate curiosity (84.7%). A very high category was also given by participants for the presence of current issues in MOOC learning that can enhance learning enthusiasm.

DISCUSSION

The phenomenon of dropouts in MOOC learning remains a contemporary learning issue. This survey found that 15.3% of participants experienced dropouts, with the main reason being difficulty in completing quizzes or other evaluations (77.3%). This may be due to the lack of support and feedback in MOOC (Zhu et al., 2022). The occurrence of dropouts in productive age, with higher education and sufficient work experience, can also be caused by the significant responsibilities in completing daily tasks, resulting in a lack of time for studying and ultimately deciding not to continue learning. This is in line with survey results that indicate 34.8% of respondents admitted to having insufficient time to study and 21.7% admitted to having an excessively heavy workload. These results are in line with the research by Fathonah which states that there is a significant relationship between physical workload and work fatigue, as well as between mental workload and work fatigue (Fathonah, 2023). Haroon et al. research also shows that time constraints and high workloads are significant barriers for teachers in participating in professional development (Haroon et al., 2023).

Furthermore, the participants' need for a more flexible learning structure is reflected in their preference for a study schedule without strict time limits (77.3%). Additionally, 54.5% of participants desire visual materials such as videos and infographics to enhance understanding, while 40.9% hope for more interactive activities. This is in line with research by Chen et al. which shows that time flexibility in MOOCs enhances participant retention and their engagement in cognitive activities (Chen, 2021). The use of visual materials such as interactive videos and infographics in MOOCs can indeed enhance learning effectiveness and help participants better understand complex concepts (Lackmann et al., 2021). This means that visual materials help enhance the cognitive engagement of training participants. Interactive activities in MOOCs can occur by enhancing the sense of community and active participation of participants, which in turn improves learning outcomes (Loh et al., 2024). Participants expect a deep process of meaning construction through dialogue and reflection. Interactive activities encourage participants to think critically, ask questions, and solve problems together, which is very important in the MOOC learning environment. Interactive activities can involve low engagement in discussion forums, resulting in a low completion rate of the learning process (Jacquet et al., 2018). Not being involved in the MOOC learning process is felt to occur because there is no real presence of facilitators in the learning process. The choice of language in MOOCs also hinders the acquisition of knowledge (von Schreeb et al., 2020). The language that can attract the presence of facilitators is deemed necessary to be given attention. Thus, the trend in MOOC development indeed focuses on interactivity (Alharbi, 2023; Liliana et al., 2022; Meet & Kala, 2021; Neha & Kim, 2023; Ponnaiah et al., 2022).

The survey on participants' needs in the development of MOOC based on the Community of Inquiry instrument shows that participants highly require a MOOC platform that prioritizes interactivity in learning. The significance of teaching, social, and cognitive presence is reflected in the statements presented in the survey, indicating high and very high categories. The presence of effective teaching is very important in creating a supportive learning environment, so that participants feel more cognitively and socially engaged (Dilling et al., 2020; Garrison et al., 2010; Hu et al., 2023; Singh et al., 2022; Zhang et al., 2022). By enhancing participants' cognitive and social awareness, their learning experience becomes more comprehensive and engaging, thereby encouraging them to actively participate in the learning process.

Community of Inquiry offers a new perspective on presence in the context of online learning that can enhance interactivity and enthusiasm in learning (Armah et al., 2023; SANCAR et al., 2023). The development of the MOOC platform must be able to predict and enhance participant engagement in learning, and the Community of Inquiry approach is one answer to achieving that engagement (Edumadze & Govender, 2024; Gamage et al., 2019). The development of MOOCs should be designed with a focus on cognitive presence through deadline

reminders and accessibility resources, the development of social presence using blogs and podcasts to build community, and the enhancement of instructor presence through nonverbal closeness in online communication, such as the use of emoticons and GIFs (Li et al., 2023; Marinda, 2024; Poquet et al., 2018). This approach aims to enhance interaction and engagement among participants in online learning, thereby creating a more effective and satisfying learning experience.

However, this study has several limitations. First, the use of closed-ended questions in the survey without delving deeper into the data through interviews. Future research needs to consider a qualitative approach to delve deeper into learning experiences, as well as conduct longitudinal analyses to understand participants' changing needs over the long term. Second, the data analysis in this study has not yet employed complex data analysis, thus it has not been able to explore the relationships between variables in greater depth. Therefore, future research is recommended to use more complex analysis methods, such as SPSS or other statistical software, to obtain more accurate and comprehensive results.

CONCLUSION

This research describes participants' need for the meaning of presence in MOOC learning inspired by the community of inquiry framework. difficulty completing quizzes and evaluations; lack of time to study; long learning duration; excessive workload; lack of responsive technical support; too much material and loss of interest in the topic are the main reasons participants drop out of the learning process. Participants desire a flexible MOOC platform that focuses on engaging visual materials and can provide a sense of presence in online learning. Learning interactivity is very important, and respondents rated the significance of teaching, social, and cognitive presence in MOOC learning highly. Future research needs to use qualitative approaches and more complex data analysis to gain a deeper understanding of participants' needs. Finally, this research contributes to designing more effective, inclusive, and sustainable MOOCs according to participants' needs and serves as a reference for online course developers to enhance participants' success and engagement through the Community of Inquiry approach.

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