

The Impact of Teaching Presence, Cognitive Presence and Social Presence on Student Engagement

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Abstract: Technology has undoubtedly enhanced the significance of convenience in learning, especially in tertiary educational institutions, as the dynamic integration between online and traditional learning is demonstrated. However, it is fair to debate whether this technology has also helped to enable the students to be more engaged in the classroom or whether the learning related factors are more prominent determinants. This descriptive research was a correlational study which was intended to examine the relationship between the elements of Community of Inquiry (CoI), comprised of teaching, learning and social presence and student engagement in UiTM Puncak Alam. The study has applied a convenience sampling method, involving 378 respondents from 22,441 undergraduates of UiTM Puncak Alam. A self-administered questionnaire of three sections was used as the instrument for this study to collect the students' perspectives on how the elements can influence their student engagement. A Pearson correlational and multiple regression analysis was conducted to ensure the achievement of the research objectives. The results have found that social presence has the strongest relationship with student engagement, supporting a similar finding from the regression analysis. Regardless, it was also found that the independent variables have explained 35.3% of the dependent variables, whereas the remaining 64.7% of student engagement can be explained by other variables that are not included in this study. Therefore, all three research objectives were achieved, and the three hypotheses were supported. The researchers have then discussed and recommended further actions that can be taken by the authorities involved in ensuring that a quality education is accessible to all students in Malaysia.

Keywords: *Student engagement, Teaching presence, Cognitive presence, Social presence*

1. Introduction and Background

Civilization has classically grown innovations of technology and humans have been living and adapting their daily activities with the technology. Its rapid evolution has dynamically affected humans' lives, especially in the learning process, whether through direct or indirect approaches. Technology has conveniently transformed the learning process from the traditional approach of the blackboard to a remarkable smartboard. Electronic gadgets are pretty much a necessity for the youngsters nowadays, in their incorporation into education settings may pique their interest to get involved in the learning process (Haleem et al., 2022). Nonetheless, a simple question may incur a whole process of debate when it comes to this application of technology in the classroom. Will the convenience of technology present a natural way of getting the students to be engaged in the classroom learning process? It is wise to say that technology alone will never guarantee good learning, especially in engaging in the lesson taught. The accessibility and privilege of technology will never be equal to understanding, assisting the students to exclusively express themselves in terms of their opinions and views of what they learnt in the class. In other words, digital tools may aid the learning process, but they will never be able to replace learning effectiveness. The constructive benefits of digital tools are apparently seen in online learning, but it is also controversial in agreeing of how online learning has enabled individuals to feel isolated.

According to Carstens et al. (2021), students are doing self-learning in digital education settings, which can somehow miss out on some of the lesson time, which can lead to a thorough conversation on the problems. As a matter of fact, this is where student engagement has become very crucial in ensuring that students consistently feel a sense of belonging to the class, who subsequently will feel less disconnected and lose interest. Students who are strongly engaged in class will have no difficulties in expressing themselves, socially and cognitively, because they are those with better self-motivation and confidence (Lasekan et al., 2024), which will help them to feel less fear of failure and judgment. Constructively, student engagement serves its highest benefit to students not only as part of the cognitive learning process, but it will also give students the

opportunity of empowerment and self-efficacy in finding their voices in both academic and personal settings. As a matter of fact, the vitality of student engagement in academic settings was expansively addressed in multiple past studies (Gurcan et al., 2023).

When it comes to learning, it is undeniably important for all teachers and students to be able to communicate effectively in the most thoughtful way. Learning will happen best when all parties involved enjoy being with the companion of each other in a way that will constructively nurture the growth of everyone. Feeling contented with the learning process is very critical in ensuring that everyone will get the best possible outcome from the activity conducted. This is where Garrison et al. (1999) Has come with a concept which was commonly used in education called 'The Community of Inquiry'. This concept was known to comprehensively cover the elements involved in students' meaningful and collaborative learning experiences. These three interdependent elements are called 'teaching presence, cognitive presence and social presence,' which bear different coverage on how the learning process shall nurture a deep and meaningful experience among the students. (Carroll et al., 2025). As students in today's technology-driven world have diverted their priorities to digital tools for various justifications, these elements highlight how learning should be able to make them learn, communicate and prepare for the prospective future.

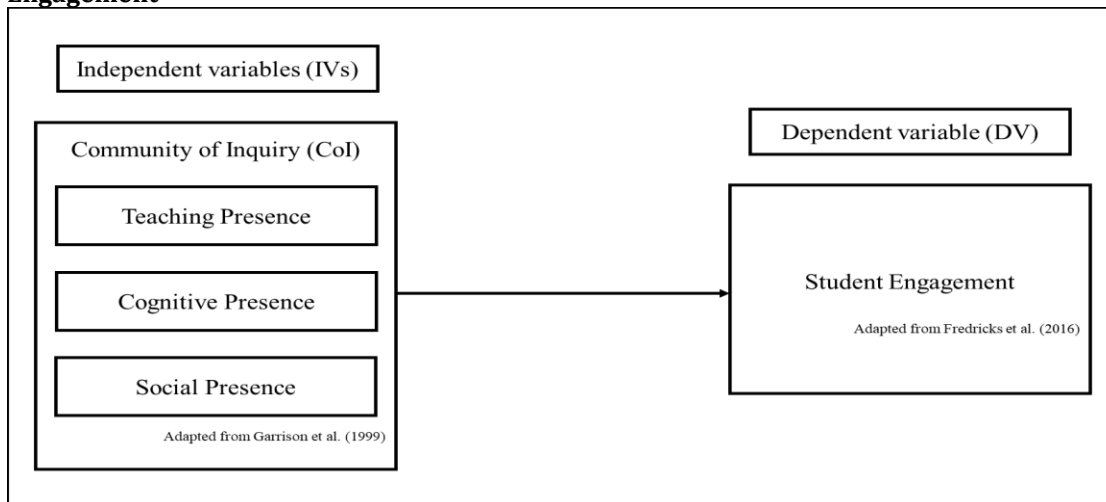
Teaching presence can be referred to as the design, assistance and instructional direction in courses, which may include the instructional feedback, strategies and support by the instructors. Simply, teaching presence is the extent to which a teacher can direct and facilitate a course to achieve its learning objectives. (Garrison et al., 2010). A teacher or an educator should be able to present to the students through the development of a structured learning environment. A good teacher should have the ability to help the students concentrate in class while demonstrating what they are expected to do during the learning process. The ability and expectation will help the students to build trust in their vulnerability towards the teacher, which subsequently encourages them to feel motivated in class. (Daumiller et al., 2023). This is because a proactive educator will make the students feel belong and are cared for, which will foster a sense of connection in the students. Ideally, a great relationship between the students and educators will boost the need for active participation as students feel engaged through their voices. (Daoayan Biaddang & Caroy, 2024). They will feel the significance in their voices, which will encourage them to ask questions, think critically and express their point of view. Besides, teaching presence would also allow the students to receive timely constructive feedback from the educators. Failure in this matter would put them in a situation to feel ignored and lost. These students are expecting prompt and helpful responses from the educators as they consider them as a reference figure or role model. Nonetheless, educators are also expected to have two-way dialogues with the students to ensure the roles of sender and receiver are taken.

Furthermore, cognitive presence can be defined as the extent to which the construction and confirmation of meaning by the learners occurs through the discourse, reflection and exploration of ideas. (Garrison, 2007). Simply, cognitive presence demonstrates the learners' ability to intellectually derive meaning through communication and reflection by creating, analyzing and applying the knowledge that they gained. About student engagement, cognitive presence will promote students to be curious and explore new things that are beyond their comfort zone, with a sense of enthusiasm in seeking answers. (McCarroll & Hartwick, 2022) That assists them to invest more time, energy and effort into learning. Consequently, this element will encourage the students to seek deep learning as they want something that is beyond memorization. They want their ideas to be connected and can provide constructive, critical feedback on the learning content, which naturally attracts them to be more engaged. Therefore, this will enhance their sense of purpose in building meaningful learning together. (Alshammari & Alrehaili, 2025) This will strengthen the need for collaborative and shared learning processes. Though learning will require the students to collaborate with their peers, they still need to foster the sense of empowerment and independence in reflecting on the knowledge learned and have more control over their learning process. Thus, it is wise to recommend that educators nurture an inquiry culture in the classroom to improve the students' cognitive presence, which empowers them with creativity and intellectual engagement. (Hambali et al., 2022).

Lastly, the final element of social presence can be referred to as the individuals' ability to identify themselves in the study community who can purposefully communicate in the respective department while developing strong interpersonal relationships through their personalities (Garrison, 2009). Multiple previous studies have

highlighted how social presence significantly and positively influences the students' learning satisfaction and overall learning outcomes (Lee & Pillai, 2022; Supardi & Ashari, 2021). With social presence, students will feel more valued, accepted and seen regardless of their background. Through social presence, students are expected to build good relationships with their educators or instructors and their peers. This element will work in conjunction with teaching and cognitive presences to aid the students to express their own selves in terms of their emotions, views and personalities. This expressiveness can support the students to feel motivated and belong to their classroom community, which will boost their sense of inclusiveness (Alshammari & Alrehaili, 2025), which is one of the many keys to sustaining student engagement. Feeling included and connected to the classroom will encourage the students to be more likely to participate in the learning activities by engaging in group work and discussions (Gökoğlu et al., 2024). This element has engraved all its goodness in enriching the learning experiences while ensuring that the students feel respected and emotionally safe. Hence, through the comprehensive literature review, three research objectives were articulated for this study which includes (1) To determine the level of student engagement of UiTM Puncak Alam students; (2) To investigate the relationship between teaching presence, cognitive presence, social presence and student engagement among UiTM Puncak Alam students; and (3) To identify the strongest predictor of student engagement among the community of inquiry elements.

Figure 1: Conceptual Framework on the Relationship between Community of Inquiry and Student Engagement



Through a literature review, three research hypotheses were suggested to meet the objectives of this study:

H_{1a}: There is a significant relationship between teaching presence and student engagement among UiTM Puncak Alam students.

H_{1b}: There is a significant relationship between cognitive presence and student engagement among UiTM Puncak Alam students.

H_{1c}: There is a significant relationship between social presence and student engagement among UiTM Puncak Alam students.

3. Methodology

This study was a descriptive study that intended to measure the relationship between two respective variables in a defined population of a public university in Malaysia. This is aligned with the cross-sectional types of investigation, which mainly aim to investigate the relationships between each element of the community of enquiry (teaching presence, cognitive presence and social presence) and student engagement in UiTM Puncak Alam. This research has applied a convenience sampling technique to approach 378 samples out of 22,441 undergraduate students. The researchers had conveniently collected the required data from these samples by approaching hostels, cafes and various faculty buildings. Apart from the physical places, the researchers also disseminated a Google Form link to potential respondents through WhatsApp and Telegram to smooth the data collection process. Briefly, the number of samples was obtained based on the formula by Krejcie and Morgan

(1970), which has been agreed to be sufficient in fulfilling the criteria of the advanced regression analysis (Hair et al., 2018). This study has managed to get a commendable 100% response rate in two weeks, in which data was further analyzed for its descriptive, correlational and multiple regression analyses by using SPSS version 29.0. Though convenience sampling was commonly known for its greater tendency to bias but it serves as one of the best sampling techniques in getting responses with great speed and less cost (Stratton, 2021). Other than that, this research has used a set of self-administered questionnaires as its instrument for data collection. This instrument comprises three parts of Part A: Demographic profile of the respondents, Part B: Student engagement questionnaire and Part C: Community of inquiry questionnaire. Part B items were adapted from Imran et al. (2023), while Part C items were adapted from Shea and Bidjerano (2010). Before the pilot study, a face validity was conducted, involving an expert in research methodology course who checked and validated the content of the instrument. Besides, a pilot study has later approved the reliability of the instrument used with the Cronbach's alpha scores of 0.734 to 0.921.

4. Results

Descriptive Analysis of Student Engagement

The first research objective was to determine the level of student engagement among UiTM Puncak Alam students, which can be accomplished through a descriptive analysis. It started with the computation of all items for teaching presence, cognitive presence and social presence into mean scores, which were then interpreted into three categories of poor engagement, fair engagement and good engagement. The Best's Principle of Thaoprom (2004) Was used for the results interpretation, in which poor engagement was represented by the scores of 1.00 to 2.00, fair engagement was represented by the mean scores of 2.01 to 3.01 and lastly, the mean scores of 3.02 to 4.00 represented good engagement. The categorization of the student engagement levels was tabulated in Table 1, where it highlighted that the majority of students have fair student engagement, with 60.3%. Surprisingly, this study has seen 13 students with poor engagement. This number may look superficially insignificant, but the occurrences may indicate otherwise. Nonetheless, this has presumed the achievement of the first objective.

Table 1: Level of Student Engagement (n=378)

Poor Engagement (Mean score 1 – 2.00)*	Fair Engagement (Mean score 2.01 – 3.01)*	Good Engagement (Mean score 3.02 – 4.00)*
13 (3.4%)	228 (60.3%)	137 (36.2%)

*Interpreted by using Best's Principle by Thaoprom (2004)

Correlational Analysis of Community of Inquiry Elements and Student Engagement

The relationship between CoI and student engagement, as of the second research objective, can be identified through the Pearson correlational analysis, considering the fact that all data were found to be normal. Table 3 shows the results from the analysis, which were interpreted by using the guidelines. Cohen (1988) For the strength and direction of the coefficient values (r). The results have identified two elements of CoI, encompassing learning and social presence, to have strong positive relationships to student engagement ($r=.555$, $p<.001$; $r=.559$, $p<.001$ respectively), leaving out teaching presence as the sole component of CoI with a moderate relationship with the dependent variable ($r=.467$, $p<.001$). Accordingly, it can be summarized that the second research objective was achieved as all the hypotheses of H_{1a} , H_{1b} and H_{1c} were supported by the findings.

Table 2: Correlations between Community of Inquiry Elements and Student Engagement

Variables	Student Engagement	
Teaching presence	Correlation coefficient	.467**
	Sig. (2-tailed)	<.001
Cognitive presence	Correlation coefficient	.555**
	Sig. (2-tailed)	<.001
Social presence	Correlation coefficient	.559**
	Sig. (2-tailed)	<.001

** Correlation is significant at the 0.01 level (2-tailed)

Multiple Regression Analysis of Community of Inquiry Elements and Student Engagement

In achieving the third research objective, a multiple regression analysis was conducted, and the results are demonstrated in Table 3. Based on the results, it can be concluded that the study has no collinearity problem as the values of tolerance were smaller than one and the values of VIF were smaller than 10. The study also has seen the R^2 value of .353 and a significant F value of $<.001$, which indicates that all elements of community of inquiry (teaching presence, cognitive presence and social presence) explained 35.3% of the variance for student engagement in UiTM Puncak Alam. Besides, the analysis has also shown that all elements of CoI can predict the dependent variable with social presence as the strongest predictor ($\beta=.292$, $p<.001$). This was then followed by the cognitive presence ($\beta=.237$, $p=.002$) and the teaching presence ($\beta=.124$, $p=.032$). Henceforth, this has marked the achievement of the third research objective.

Table 3: Multiple Regression Analysis on Community of Inquiry Elements and Student Engagement

Independent variables	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics	
				Tolerance	VIF
Teaching presence	.124	2.150	.032	.522	1.917
Cognitive presence	.237	3.162	.002	.307	3.261
Social presence	.292	4.150	<.001	.349	2.865
R2 Value			.353		
F			68.020		
Sig. F Value			<.001		

Discussion

Level of Student Engagement

Student engagement is undoubtedly proven to be crucial in influencing students to have better learning outcomes, stronger interpersonal relationships and stronger self-motivation, which will eventually lead to better personal growth. Various research studies on student engagement were conducted to expand the understanding of the education community in which it is expected to believe that higher educational institutions are very much known to be accountable for the students' engagement. Hence, a good level of student engagement was expected from this study, but unfortunately, a contradictory result was shown. It was found that most students had fair student engagement and only 36.2% believed that they were having good engagement. These findings were very much like Malaysia's previous studies' findings. (Md Nawi et al., 2021; Teoh et al., 2013). Though these contrasting findings may be a bit surprising for most educators, they also projected that the interventions done did not sufficiently reflect what they needed from the instructors and institutions. Regardless of these inferior results found, some previous studies in other countries may be aligned and justified. According to Subramanian and A. Mahmoud (2020) Asian students were generally found to possess a low student engagement level, as most of them (more than 80%) feel disinterested in the classes and would not ask questions during the lessons.

The Relationship between Community of Inquiry Elements and Student Engagement

The significance of student engagement was critically addressed by various studies and it was also commonly linked to multiple influential factors for instance, learning environment (Meganathan, 2024), social interaction (Istijanto & Nathalie, 2024) and teacher behavior (Li & Xue, 2023). The integration of these concepts into becoming the determinants of student engagement is in line with the constructs of CoI. Accordingly, this study has found that teaching presence, cognitive presence and social presence have significant positive relationships with student engagement. These results were aligned to past studies where teaching presence was found to have a positive correlation with affective student engagement (Lasekan et al., 2024; Zhang et al., 2023). Even so, according to Doo et al. (2023), teaching presence was indicated not to have any significant impact on student engagement, even though there was a mediating effect of the variable on the association between self-efficacy and learning engagement. This is because it is believed that the active participation from the students was not sufficiently assisted by the instructors (Doo et al., 2023). On the other hand, cognitive presence has been emphasized to be correlated to the dependent variable as found by Alshammari and Alrehaili (2025). This link was justified as students' cognitive abilities in critical thinking are essential to foster an endurance learning

outcome, which consequently helped them to be engaged in the lessons learnt in the classroom. It was also found that teaching presence may positively affect cognitive presence (Doo et al., 2023), which has been discussed in relevant empirical literature (Caskurlu et al., 2020). Last of all, social presence, which was also commonly associated with teaching presence in terms of teacher-student relationships (Li & Xue, 2023), was found to be correlated with student engagement (Alshammari & Alrehaili, 2025). Through social presence, students are enabled to collaborate in learning, freely express their views on lessons and have an effective learning environment (Alshammari & Alrehaili, 2025). This has strengthened the findings by Odhiambo (2024), who discovered how the online learning community's engagement can be fostered by a strong sense of social presence.

Strongest Predictor of Student Engagement

Regardless, there was an abundance of literature indicating the strong impact of Col's elements in impacting student engagement, and the R^2 value reflected a decent explanation. They may be able to explain the respective dependent variable, but 64.7% was explained by other independent variables. Moreover, the predicted effects showed by the standardized coefficients Beta of each Col element have strengthened the mentioned indictment. Though all elements were significantly predicting the variable, social presence was the greatest predictor. According to Li and Xue (2023) Student engagement may be influenced by peer interaction, which includes the relationship between teacher and student. It is also important to point out that Malaysian students were found to have student-centered practices whereby the teachers possessed more eclectic beliefs, which demonstrated a combined student and teacher-centered learning approach. (Leng et al., 2018). Post-COVID-19 pandemic has witnessed the dynamic of learning approaches, whether it is online or blended learning, that offer better opportunities for students and lecturers to interact socially interacting to each other. (Joshi et al., 2023). The isolated emotions that circulated in the presence of social distancing during COVID-19 have seen a remarkable need for social presence. This is because some negative feelings can be reduced during learning through social interactions, whereby students are likely to come across positive experiences that enhance their willingness to learn and improve concentration (Wilson et al., 2018). Thus, this has projected the appropriate reasons behind the significant predictive effects of social presence on student engagement for this study.

5. Conclusion and Recommendations

In a nutshell, it is fair to conclude that UiTM Puncak Alam students have fair student engagement despite witnessing various types of learning interventions introduced during the classroom activities to ensure they are being engaged and presumably applied in their daily activities. The findings have indicated that teaching presence, cognitive presence and social presence have significant positive relationships to student engagement, with social presence having the strongest relation to the respective dependent variable. Similarly, findings from the multiple regression analysis have demonstrated a parallel result where social presence was found to be the strongest predictor of student engagement. This is why it has brought to light the importance of having good social relationships in the classroom so that the students will not feel isolated, and eventually feel a part of the class community. Subsequently, they will feel motivated to engage and be involved in any group activities or discussions. This whole scenario will witness a closer gap in achieving quality education as highlighted in the global agenda of SDG4, which is designed to ensure equal quality and integrative education that promotes lifelong learning opportunities by 2030 (Demirbağ & Sezgin, 2021). Quality education not only requires the assistance of teachers in providing the best learning materials and environment through teaching and cognitive presence, but also requires the presence of companions through social presence. Quality education is not particularly about who is smart and has a higher intelligence quotient, but it is about the upbringing of individuals to bring out the best in society as well. As for future studies, the researchers would like to suggest a more comprehensive coverage of the population to ensure the generalizability of the results. For instance, involving student representatives from all public universities in Malaysia, including the Borneo region. The limitations of convenience sampling can also be reduced by applying more reliable probability sampling, such as cluster sampling. A study on student engagement shall be conducted to explore more influential factors that will assist the required authorities, for example, the Ministry of Higher Education, to identify what is best for the students. Problem identification would enable the respective parties to counter the problems that existed by adapting the best practices to the study curriculum.

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