

The Association between Facilitation and Online Presence in Online Learning

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ABSTRACT

Online learning requires effective facilitation to support learner participation, interaction, and knowledge construction. This study aims to examine the relationship between facilitation and online presence in online learning, based on the Community of Inquiry framework (Garrison & Arbaugh, 2007). A quantitative survey was conducted with 170 participants from Malaysia and outside Malaysia, using a 31-item, five-point Likert-scale questionnaire covering demographic information, facilitation, teaching presence, social presence, and cognitive presence. The findings revealed positive perceptions of facilitation and online presence, with strong and significant relationships between facilitation and teaching presence, social presence, and cognitive presence. The findings suggest that effective facilitation plays an important role in supporting meaningful interaction, engagement, and learning in online environments.

Keywords: Facilitation, Online Learning, Teaching Presence, Social Presence, Cognitive Presence

INTRODUCTION

Background of Study

Online learning has transformed modern education by offering flexible, anytime, and anywhere access through digital tools. However, moving away from physical classrooms often leaves students feeling isolated, less engaged, and disconnected from collaborative teamwork (Moore et al., 2011; Picciano et al., 2012; Rahmat et al., 2021). To fix these gaps and create meaningful connections, educational research now focuses on designing virtual spaces that turn passive screen time into deep, active engagement.

Effective online education hinges less on passive lecturing and more on facilitation. Rogers (1983) defined as building a supportive space where students drive their own learning and engage actively. In digital classrooms, this comes to life through guiding discussions, offering constructive feedback, and sparking peer-to-peer collaboration (Vygotsky, 1978). This approach is neatly captured by Garrison and Arbaugh's (2007)

Community of Inquiry (CoI) framework, which argues that thriving online learning relies on three intersecting pillars: teaching presence (course design and facilitation), social presence (how students project themselves socially), and cognitive presence (how learners build meaning through deep reflection). Ultimately, skilled facilitation drives and connects these core dimensions of the online experience.

At the heart of good online learning is facilitation. Instead of just handing down instructions, Rogers (1983) explained that facilitation is about building a supportive space where students can guide themselves and actively take part. In online classes, this means helping lead discussions, giving feedback on time, and getting students to talk and learn from each other (Vygotsky, 1978).

This idea is built on the Community of Inquiry framework by Garrison and Arbaugh (2007), which shows that successful online learning relies on three main parts: teaching presence (how the course is set up and guided), social presence (how students connect with one another), and cognitive presence (how students think deeply and make sense of what they are learning). Put simply, proper facilitation is what drives and shapes all of these elements.

Despite extensive research, online learning remains a crucial topic as institutions struggle to keep students engaged and prevent dropouts in today's digital world (Rahmat et al., 2021). While past studies have looked at different types of interaction on their own, there is a big gap when it comes to understanding how facilitation directly impacts all three dimensions of online presence (teaching, social, and cognitive presence) all at once—especially across different academic levels of study. This study fills that gap by examining how students view facilitation and how it shapes online presence to make virtual learning as effective as possible.

Statement of Problem

Online education has made learning more flexible and accessible than ever, allowing students to study from anywhere at any time. However, stepping away from traditional classrooms often comes at a cost, leaving many online students feeling isolated, disconnected, and unmotivated when forced to learn behind a screen (Moore et al., 2011; Picciano et al., 2012; Rahmat et al., 2021). To make digital classrooms work, instruction needs to shift away from passive lectures and focus heavily on active facilitation like guiding discussions, offering timely feedback, and encouraging students to collaborate (Rogers, 1983; Vygotsky, 1978). This human connection is essential to building a healthy digital learning environment, best described by Garrison and Arbaugh's (2007) Community of Inquiry framework through three connected pillars: teaching presence, social presence, and cognitive presence.

Despite what institutions know about the benefits of good facilitation, a major issue persists in real-world online courses. Too often, online classes are treated like static digital repositories where students are left to teach themselves with minimal instructor involvement. When real interaction is missing, students quickly lose focus, struggle to connect with their peers, and become much more likely to drop out (Rahmat et al., 2021). While past studies have looked at separate parts of online interaction for example, how students use message boards or digital tools and they rarely look at the bigger picture.

Consequently, there is still a lack of clear understanding regarding how instructor facilitation shapes all three core pillars of online learning simultaneously. Furthermore, recent research explicitly highlights the need to study how these digital interactions play out across different academic levels, as undergraduate and postgraduate students often need very different types of support (Wang et al., 2025). Without looking at facilitation holistically, universities risk spending time and money on digital tools without actually improving the human side of teaching. This study addresses the issue by exploring how students experience facilitation and how that guidance drives their overall online presence and learning experience.

Objective of the Study and Research Questions

This study explores the influence of facilitation in online learning. Specifically, this study is done to answer the following questions;

- Do reported online presence scores differ significantly across levels of study?

- H_{01} : There is no significant relationship between facilitation and online presence across levels of study
- How do learners perceive facilitation in online learning?
- How do learners perceive presence in online learning?
- Is there a significant association between facilitation and teaching, social, and cognitive presence?
- H_{02} : There is no significant relationship between facilitation and online presence across levels of study

LITERATURE REVIEW

Theoretical Framework of the Study

Facilitation Theory, advanced by Carl Rogers (1983) in *Freedom to Learn* for the 80's, offers a humanistic perspective on teaching and learning that positions the educator not as an authoritative transmitter of knowledge, but as a facilitator who nurtures a climate conducive to self-directed learning. Rogers (1983) argued that meaningful learning takes place when learners are given the freedom to explore, question, and construct understanding within a psychologically safe and supportive environment, rather than being passively instructed. Central to this theory are three core facilitative conditions: genuineness (realness) on the part of the facilitator, unconditional positive regard for the learner, and empathetic understanding of the learner's internal frame of reference. When these conditions are present, learners are said to become more open to experience, more trusting of their own judgment, and more willing to take ownership of their learning process.

In the context of online distance learning (ODL), Facilitation Theory holds particular relevance, as the physical absence of an instructor in a traditional classroom sense makes deliberate, purposeful facilitation even more critical to sustaining student engagement (Rahmat et al., 2021). Rather than merely delivering content through a learning management system, an effective online facilitator actively guides discussions, provides timely and constructive feedback, clarifies expectations, and encourages a sense of community among learners who may otherwise feel isolated behind a screen. This is consistent with the view that facilitation in digital environments extends beyond content delivery to encompass emotional and motivational support, thereby reducing the sense of transactional distance that often characterises online education (Moore et al., 2011).

Facilitation Theory therefore provides the theoretical anchor for the present study's conceptualisation of the facilitation construct, which is operationalised through instructor behaviours such as guiding class understanding, sustaining productive dialogue, keeping learners on task, and reinforcing a sense of community (see Table 6). By grounding the study in Rogers' (1983) principles, this research assumes that the degree to which learners perceive their instructor as facilitative will, in turn, shape how they experience teaching, social, and cognitive presence within the Community of Inquiry framework (Garrison & Arbaugh, 2007).

Lev Vygotsky's theory of social constructivism posits that cognitive development is inherently a social and cultural process, arguing that learning occurs through meaningful interactions with more knowledgeable individuals rather than through isolated individual exploration. This theory supports facilitation in learning, be it onsite or online learning. An online facilitator is not there to spoon feed information rather to facilitate the process of learning by encouraging exchange of ideas, providing feedback and pushing class participation, making online learning less lonely and more efficient.

Central to Vygotsky's (1978) theory is the concept of the Zone of Proximal Development (ZPD), which refers to the distance between what a learner can accomplish independently and what that learner can achieve with the guidance of a more knowledgeable other, be it an instructor or a more capable peer. Within this zone, learning is most effective, as the learner is neither left to struggle entirely alone nor given the answer outright, but is instead supported through a process often referred to as scaffolding. In an online learning environment, this scaffolding function is typically assumed by the facilitator, who structures discussions, poses guiding questions, and provides timely feedback that nudges learners toward deeper understanding without removing the productive struggle that learning requires. Vygotsky (1978) further emphasised that language and dialogue

serve as the primary tools through which social interaction is internalised into individual cognitive growth, underscoring why discussion boards, synchronous chats, and collaborative online tasks are not merely supplementary features of online courses but essential mechanisms through which knowledge construction takes place.

This theoretical position connects closely with Facilitation Theory (Rogers, 1983), discussed earlier, in that both perspectives reject the notion of the instructor as a mere transmitter of information. Where Rogers (1983) emphasises the affective and motivational climate that a facilitator must cultivate to enable self-directed learning, Vygotsky (1978) provides the cognitive and social mechanism through which that facilitated interaction translates into actual learning gains. Read together, the two theories suggest that effective online facilitation operates on two complementary levels: it creates the psychologically safe space in which learners feel free to participate (Rogers, 1983), while simultaneously structuring the social interactions, peer exchanges, and instructor guidance through which knowledge is co-constructed (Vygotsky, 1978). This is particularly salient in distance learning contexts, where the physical separation between learners and instructors can otherwise weaken the social fabric necessary for collaborative meaning-making (Rahmat et al., 2021).

Applied to the present study, Social Constructivism justifies the treatment of social presence and cognitive presence as interrelated outcomes of facilitation, since the extent to which learners feel socially connected to their peers (social presence) is theorised to directly influence their ability to explore, integrate, and resolve

course-related problems through dialogue (cognitive presence), as captured in the Community of Inquiry framework (Garrison & Arbaugh, 2007). An online facilitator, guided by this theory, is therefore expected not to spoon-feed information, but rather to facilitate the process of learning by encouraging the exchange of ideas, providing constructive feedback, and actively pushing class participation, thereby making online learning less isolating and more cognitively productive for learners across all levels of study.

Past Studies Online Presence

A growing body of research has investigated how instructor support and active facilitation directly impact student engagement and success in online higher education. For instance, Wang et al. (2025) explored the factors that drive students' online behavioral engagement and how those behaviors affect academic performance. Their quantitative study surveyed 412 university students using an online questionnaire to measure interaction levels, perceived support, and engagement. They found that active instructor involvement and collaborative activities were strong predictors of high engagement, which in turn boosted academic performance. The major takeaway is that digital tools alone are not enough; sustained student success requires deliberate instructional support. Similarly, Wei et al. (2024) examined the connection between teacher support and learner persistence in digital spaces. By surveying 358 undergraduate students, their findings showed that when students felt supported both instructionally and emotionally by their teachers, they experienced less online learning fatigue and were more likely to stick with the course. Their work implies that continuous teacher guidance acts as a vital safety net, keeping students motivated online.

Gao et al. (2023) investigated how the Community of Inquiry (CoI) framework creates educational value through teaching, social, and cognitive presences. Through a systematic review across multiple university settings, they evaluated how instructor-led teaching presence shapes learning outcomes. Their findings indicated that structured facilitation is the primary driver of teaching presence, which naturally encourages social connection and deeper thinking. This shows that facilitation connects social interaction with deeper learning. Furthermore, Rahmat et al. (2021) looked at the challenges of learner isolation and engagement in online higher education. After surveying 120 university students, they discovered that a lack of active instructor guidance directly led to feelings of isolation and a drop in motivation to complete group tasks. Their research highlights that intentional facilitation is essential to counteracting the physical and psychological distance inherent in online learning.

In summary, these past studies confirm that instructor support, active guidance, and structured online presence are crucial for preventing student isolation and improving academic performance. However, while these researchers have proven that elements like teacher support positively impact students, they tend to look at these

factors in isolation or focus on just one aspect of engagement. This current study builds on their work by arguing that instructor facilitation shouldn't be viewed as just a standalone feature; rather, it needs to be examined as a holistic, driving force that simultaneously shapes teaching, social, and cognitive presence across different academic levels to truly make online learning work.

Conceptual Framework of the Study

Figure 1 presents the conceptual framework illustrating the influence of facilitation on online learning through three dimensions of online presence: teaching presence, social presence, and cognitive presence. The framework is anchored in Facilitation Theory developed by Rogers (1983), which emphasizes the role of facilitation in creating a supportive learning environment that encourages active participation, engagement, and learner autonomy. In online learning settings, facilitation involves guiding learners, providing feedback, fostering communication, and supporting knowledge construction. Effective facilitation enables learners to become more actively involved in the learning process and promotes meaningful interaction among participants. This view is supported by Rahmat et al. (2021), who found that learners need interaction in order to succeed in online learning, highlighting the importance of facilitative practices in fostering engagement and learning outcomes in virtual environments.

The framework is further grounded in Social Constructivism proposed by Vygotsky (1978), which posits that learning occurs through social interaction and collaborative knowledge construction. From this perspective,

online presence is essential because it allows learners to interact, exchange ideas, and develop understanding through shared experiences. The construct of online presence is measured using the instrument developed by Garrison and Arbaugh (2007), which is based on the Community of Inquiry framework and comprises three dimensions: teaching presence, social presence, and cognitive presence. Teaching presence refers to the design and facilitation of learning experiences, social presence reflects learners' ability to connect and communicate with others, and cognitive presence represents the extent to which learners construct meaning through reflection and discourse. Accordingly, the framework proposes that effective facilitation positively influences teaching, social, and cognitive presence, thereby enhancing the quality and effectiveness of online learning.

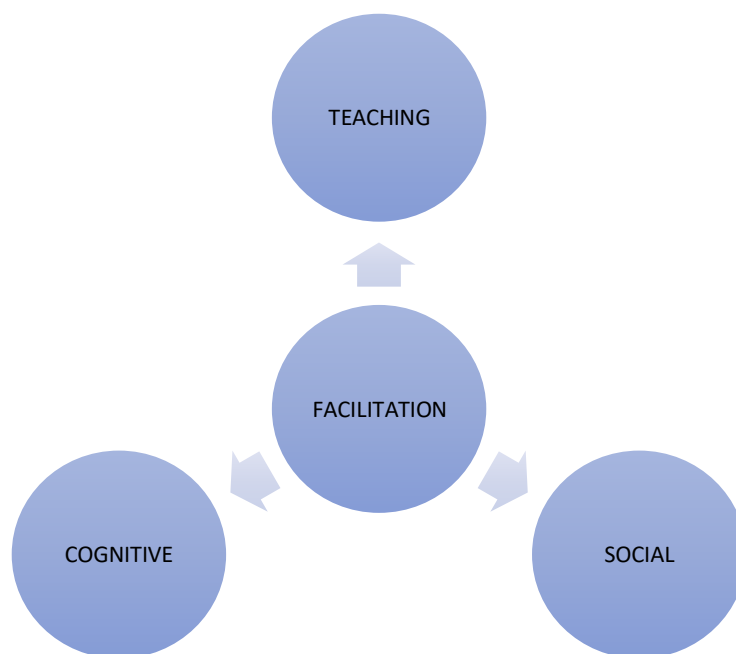


Figure 1- Conceptual Framework of the Study

The Association Between Facilitation and Online Presence in Online Learning

METHODOLOGY

This quantitative study is done to explore the influence of facilitation in online learning. A convenience

sample of 170 participants responded to the survey. The instrument used was a five-point Likert-scale questionnaire adapted from the Community of Inquiry framework (Garrison & Arbaugh, 2007) to measure facilitation, teaching presence, social presence, and cognitive presence. Table 1 below shows the categories used for the Likert scale; 1 is for Never, 2 is for Rarely, 3 is for Sometimes, 4 is for Very Often, and 5 is for Always.

Table 1- Likert Scale Use

1	Never
2	Rarely
3	Sometimes
4	Very Often
5	Always

Table 2- Distribution of Items in the Survey

SECTION	VARIABLE (TYPE OF PRESENCE)	CONSTRUCT	ITEM	NO OF ITEMS
B	TEACHING	Facilitation	4	4(.858)
		Design & Instruction	3	6 (.915)
		Direct Instruction	3	
C	SOCIAL	Affective Expression	3	9(.906)
		Open Communication	3	
		Group Cohesion	3	
D	COGNITIVE	Triggering Event	3	12 (.941)
		Exploration	3	
		Integration	3	
		Resolution	3	
		TOTAL		31(.970)

Table 3- Reliability Levels, Cronbach's Alpha Ranges, and Their Interpretations

Reliability Level	Cronbach's Alpha range	Interpretation
Excellent	0.9 and above	Indicates very high internal consistency
Good	0.80-0.89	Reflects strong internal consistency
Acceptable	0.70-0.79	Indicates acceptable internal consistency
Questionable	0.60-0.69	Reflects questionable internal consistency
Poor	Below 0.6	Indicates poor internal consistency

In order to determine the internal reliability of the instrument, reliability analysis is conducted. . Table 3 above shows the distribution and interpretation of Cronbach Alpha range. According to Ahmad et al. (2024), Cronbach Alpha scores between 0.7 to 0.9 is considered acceptable to excellent. Table 2 also shows the reliability of the survey. The analysis shows a Cronbach alpha of .858 for Facilitation, .915 for Teaching, .906 for Social Presence, and .941 for Cognitive Presence. The overall Cronbach Alpha for all 31 items is .970; thus, revealing a good reliability of the instrument chosen/used. Further analysis using SPSS is done to present findings to answer the research questions for this study.

FINDINGS

Demographic Analysis

According to Zienefuss, et.al (2021), researchers report demographic data in percentages to establish sample representatives, and allow for generalizability to a larger population. The reporting also provides an overview of participants' characteristics. Percentages offer a clear and understandable picture of the sample makeup.

Table 4- Percentage for Demographic Profile

Question	Demographic Profile	Categories	Percentage (%)
1	Gender	Male	27%
		Female	73%
2	Location of Study	Malaysia	54%
		Outside Malaysia	46%
3	Level of Study	Diploma	16%
		Degree	56%
		Postgraduate	28%

Table 4 presents the demographic distribution of the 170 respondents who participated in this study. In terms of gender, the sample was predominantly female, comprising 73% of respondents, compared to 27% who were male. This imbalance is not unusual in survey-based educational research within the local higher education context, where female enrolment in many academic programmes tends to outnumber male enrolment, and it should be borne in mind when interpreting the generalisability of the findings. With regard to location of study, slightly more than half of the respondents (54%) were studying within Malaysia, while the remaining 46% were studying outside Malaysia, indicating a fairly balanced representation of both local and international learning contexts and lending reasonable diversity to the sample's perspectives on online facilitation.

In terms of level of study, the majority of respondents were degree-level students (56%), followed by postgraduate students (28%), while diploma-level students formed the smallest group at 16%. This distribution suggests that the findings of the present study are weighted more heavily toward undergraduate degree students' perceptions of facilitation and online presence, although the inclusion of a substantial proportion of postgraduate respondents allows for meaningful comparison across levels of study, as required to address the first research question. Taken together, the demographic profile indicates a sample that, while skewed toward female and degree-level respondents, nonetheless provides adequate representation across gender, location, and academic level to support the inferential analyses conducted in this study.

Inferential Statistics

According to He (2024), there are three main functions of a T-test and ANOVA. Firstly, both are done to compare means. This test is also done to determine if the average scores (mean) or values of two groups, or one group against a known value, are different enough to be considered statistically meaningful and are not just due to random chance. Secondly, T-test and ANOVA are done to test hypotheses. Researchers use t-tests and ANOVA to test hypotheses about means, such as whether a new treatment significantly impacts a variable or if there's a difference in performance between two distinct groups. Lastly, T-test and ANOVA are done to identify significant differences. The output of a t-test provides a p-value (significance value). If this p-value is below a predetermined threshold (often 0.05), it indicates a statistically significant difference, allowing researchers to draw conclusions about the populations from which their samples were drawn. A one-way ANOVA (Analysis of Variance) is a statistical method used to compare the means of three or more independent (unrelated) groups to determine if there is a statistically significant difference between them. It is a parametric test that evaluates the effect of a single independent variable (the factor) on a dependent variable.

Findings for Significant Difference for all factors across Clusters

This section presents data to answer Research Question 1:

Do reported online presence scores differ significantly across levels of study?

H_{01} : There is no significant relationship between facilitation and online presence across levels of study

Table 5- ANOVA for Online Presence across levels of Study

		MEAN	SD	T/F-Statistics df	p-value	OUTCOME
Level of Study	Diploma	3.5	0.89	$t(165)=.468$	$<.001$	H1 Rejected
	Degree	3.98	0.7			
	Postgraduate	4.17	0.48			

The descriptive means show higher reported online presence among postgraduate respondents ($M = 4.17$, $SD = 0.48$), followed by degree respondents ($M = 3.98$, $SD = 0.70$) and diploma respondents ($M = 3.50$, $SD = 0.89$). However, the original manuscript reports the inferential result as $t(165) = .468$, $p < .001$ while describing the analysis as a one-way ANOVA. These statistics are internally inconsistent with the stated analysis. The original SPSS output should therefore be rechecked before publication. For a one-way ANOVA, the manuscript should report the F statistic, between- and within-group degrees of freedom, exact p-value, an appropriate effect size, assumption checks, and post-hoc comparisons if the omnibus test is significant. The present revision does not invent a corrected F value because it is not available in the supplied manuscript.

Descriptive Statistics

According to Vetter (2017), the mean (M) represents the average or central value of a data set, while the standard deviation (SD) indicates the typical distance of individual observations from the mean, thereby reflecting the variability or spread of the data. A low SD indicates that the observations are clustered relatively close to the mean, whereas a high SD indicates that the observations are more widely dispersed. Therefore, the SD should not be interpreted as inherently good or bad. Instead, it should be interpreted in relation to the mean, the measurement scale, and the context of the study. Reporting both the mean and standard deviation provides a clearer understanding of the central tendency and variability of the data.

Findings for Facilitation

This section presents data to answer Research Question 2: How do learners perceive facilitation in online learning?

Table 6 – Mean (M) and Standard Deviation (SD) for Facilitation (F)

ITEM	M	SD
FQ1 The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.	4.11	0.95
FQ2 The instructor helped to keep course participants engaged and participating in productive dialogue.	4.2	0.91
FQ3 The instructor helped keep the course participants on task in a way that helped me to learn.	4.18	0.92
FQ4 Instructor actions reinforced the development of a sense of community among course participants.	4.15	0.89

Table 6 presents the mean and standard deviation values for facilitation. The item with the highest mean score was FQ2, “The instructor helped to keep course participants engaged and participating in productive dialogue,” with $M = 4.20$ ($SD = 0.91$), followed by FQ3 with $M = 4.18$ ($SD = 0.92$). FQ4 recorded $M = 4.15$ ($SD = 0.89$), while FQ1 recorded $M = 4.11$ ($SD = 0.95$). The lowest mean score was recorded for FQ1, indicating that guiding learners to understand course topics and clarify their thinking was comparatively less strongly

reported. Overall, the findings suggest that maintaining learner engagement and productive dialogue was the most frequently perceived facilitation practice.

Findings for Presence

This section presents data to answer Research Question 3: How do learners perceive presence in online learning? In the context of this study, this is measured by (a) teaching, (b) social, (c) cognitive presence.

Teaching Presence

This is measured by (i) design & instruction, and (ii) direct instruction

Table 7– Mean (M) and Standard Deviation (SD) for Design & Instruction (DES)

Item	M	SD
DESQ1The instructor clearly communicated important course topics.	4.05	1.05
DESQ2The instructor clearly communicated important course goals.	4.05	1.16
DESQ 3The instructor provided clear instructions on how to participate in course learning activities.	4.12	0.93

DESQ1 and DESQ2 shared the same mean score ($M = 4.05$), although DESQ2 showed slightly greater variability ($SD = 1.16$) than DESQ1 ($SD = 1.05$).

Table 8– Mean (M) and Standard Deviation (SD) for Direct Instruction (DIR)

ITEM	M	SD
DIRQ1. The instructor clearly communicated important due dates/time frames for learning activities.	4.12	1.08
DIRQ2. The instructor encouraged course participants to explore new concepts in this course.	3.9	1.05
DIR3. The instructor provided feedback in a timely fashion.	3.36	0.97

Table 8 presents the mean scores and standard deviations for Direct Instruction (DIR), indicating that respondents generally expressed positive perceptions of the instructor's guidance, although the level of agreement varied across specific aspects. Clear communication regarding due dates and time frames (DIRQ1) received the highest mean score ($M = 4.12$, $SD = 1.08$), indicating a relatively high level of agreement among the respondents.

The instructor's encouragement to explore new concepts (DIRQ2) also recorded a relatively high mean score ($M = 3.90$, $SD = 1.05$), suggesting positive perceptions of the instructor's efforts to promote student engagement and exploration. In contrast, the provision of timely feedback (DIRQ3) recorded the lowest mean score ($M = 3.36$, $SD = 0.97$). Although this score still reflects a generally positive perception, the comparatively lower mean suggests that timely feedback may warrant greater attention and could be considered an area for further improvement.

SOCIAL PRESENCE

This is measured by (i) affective expression, (ii) open communication, and (iii) group cohesion.

Table 9 – Mean (M) and Standard Deviation (SD) for Affective Expression (AE)

ITEM	M	SD
AEQ 1 Getting to know other course participants gave me a sense of belonging in the	3.94	0.98

course.		
AEQ2I was able to form distinct impressions of some course participants.	3.79	0.96
AEQ 3 Online or web-based communication is an excellent medium for social interaction.	3.85	1.05

Table 9 presents the descriptive statistics for the Affective Expression (AE) dimension of social presence, revealing generally positive but comparatively moderate perceptions among respondents. The highest-rated item was AEQ1, which measured the extent to which getting to know other course participants gave learners a sense of belonging in the course ($M = 3.94$, $SD = 0.98$), suggesting that peer familiarity played a meaningful role in fostering connectedness. This was followed by AEQ3, concerning the perception that online or web-based communication is an excellent medium for social interaction ($M = 3.85$, $SD = 1.05$), while AEQ2, which assessed learners' ability to form distinct impressions of fellow course participants, recorded the lowest mean score ($M = 3.79$, $SD = 0.96$), also reflecting the tightest spread of responses among the three items.

Overall, these results suggest that although learners generally felt a sense of belonging and viewed online platforms favourably as a channel for social interaction, forming clear, individualised impressions of classmates remained comparatively more difficult in the absence of face-to-face cues. This pattern is consistent with the notion that affective expression online is constrained by the reduced non-verbal and contextual signals available in text-based or screen-mediated communication, even where learners otherwise feel emotionally connected to the course community.

Table 10 – Mean (M) and Standard Deviation (SD) for Open Communication (OC)

ITEM	M	SD
OCQ1 I felt comfortable conversing through the online medium.	3.74	1.06
OCQ2 I felt comfortable participating in the course discussions.	3.92	0.85
OCQ3 I felt comfortable interacting with other course participants.	3.89	0.96

Table 10 displays the descriptive statistics for the Open Communication (OC) dimension, indicating that respondents were generally comfortable engaging with others within the online learning environment. The highest mean score was recorded for OCQ2, reflecting learners' comfort in participating in course discussions ($M = 3.92$, $SD = 0.85$), which also demonstrated the lowest standard deviation and therefore the strongest consensus among the three items. This was closely followed by OCQ3, concerning comfort in interacting with other course participants ($M = 3.89$, $SD = 0.96$), while OCQ1, which measured comfort in conversing through the online medium more broadly, obtained the lowest mean score ($M = 3.74$, $SD = 1.06$) alongside the greatest variability in responses.

These findings suggest that learners felt more at ease engaging in structured, course-related discussions and direct peer interaction than they did with the online medium of communication in a general sense. The relatively wider spread of responses for OCQ1 may point to differing levels of comfort with digital communication tools among learners, possibly influenced by prior exposure to online platforms or individual communication preferences, an area that instructors may wish to address through more deliberate scaffolding of online communication norms.

Table 11 – Mean (M) and Standard Deviation (SD) for Group Cohesion (GC)

ITEM	M	SD
GCQ1 I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.	3.61	1.05
GCQ2 I felt that my point of view was acknowledged by other course participants.	3.71	0.96

GCQ3 Online discussions help me to develop a sense of collaboration.	3.87	1
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Table 11 displays the descriptive statistics for Group Cohesion (GC), reflecting moderately positive perceptions across all three evaluated items. The highest-rated statement indicates that participants generally agreed online discussions helped foster a sense of collaboration (GCQ3: $M = 3.87, SD = 1.00$), followed closely by the feeling that their viewpoints were acknowledged by peers (GCQ2: $M = 3.71, SD = 0.96$), which demonstrated the highest consensus among respondents. Although participants still expressed general agreement, feeling comfortable disagreeing with others while maintaining trust scored slightly lower (GCQ1: $M = 3.61, SD = 1.05$). Taken together, these results show that while the online environment effectively encouraged collaborative learning and mutual acknowledgement, establishing deep interpersonal trust for comfortable open disagreement was comparatively slightly more challenging for learners.

Cognitive Presence

This is measured by (i) triggering event, (ii) exploration, (iii) integration, and (iv) resolution.

Table 12 – Mean (M) and Standard Deviation (SD) for Triggering Event (TE)

ITEM	M	SD
TEQ1 Problems posed increased my interest in course issues.	3.79	0.97
TEQ 2 Course activities piqued my curiosity	3.94	0.94
TEQ 3I felt motivated to explore content related questions.	4.04	0.99

Table 12 shows the descriptive analysis for Triggering Event (TE)—the first sub-dimension of Cognitive Presence—shows that respondents generally felt motivated and curious throughout the course. Among the three items, feeling motivated to explore content-related questions (TEQ3) recorded the highest level of agreement $M=4.04, SD=0.99$ indicating strong learner interest. Course activities piquing student curiosity (TEQ2) also received high agreement $M=3.94, SD= 0.94$ followed closely by posed problems increasing interest in course issues TEQ1, $M=3.79, SD=0.97$ overall, these results suggest that the course successfully triggered student interest and sparked active cognitive engagement.

Table 13 – Mean (M) and Standard Deviation (SD) for Exploration (EX)

ITEM	M	SD
EXQ1 I utilized a variety of information sources to explore problems posed in this course.	3.94	0.99
EXQ2 Brainstorming and finding relevant information helped me resolve content related questions.	4.01	0.99
EXQ3 Online discussions were valuable in helping me appreciate different perspectives.	3.94	0.96

Table 13 presents the descriptive statistics for Exploration (EX), the second sub-dimension of Cognitive Presence, showing consistently strong and closely clustered mean scores across all three items. EXQ2, which measured the extent to which brainstorming and finding relevant information helped learners resolve content-related questions, recorded the highest mean score ($M = 4.01, SD = 0.99$), suggesting that active information-seeking strategies were particularly effective in supporting learners' understanding. This was followed by EXQ1 and EXQ3, both of which obtained identical mean scores ($M = 3.94$), reflecting learners' use of a variety of information sources to explore course problems ($SD = 0.99$) and their appreciation of online discussions in helping them consider different perspectives ($SD = 0.96$), respectively.

Taken together, these results indicate that learners were actively engaged in the exploratory phase of cognitive presence, drawing on multiple resources and peer discussion to deepen their understanding of course content. The narrow range of mean scores across the three items further suggests a relatively uniform learning experience during this stage, implying that the course design provided consistent opportunities for learners to

investigate, brainstorm, and exchange perspectives before progressing to the integration and resolution stages of cognitive presence.

Table 14 – Mean (M) and Standard Deviation (SD) for Integration (IN)

ITEM	M	SD
INQ1 Combining new information helped me answer questions raised in course activities.	4.06	1
INQ2 Learning activities helped me construct explanations/solutions.	4.12	0.92
INQ3 Reflection on course content and discussions helped me understand fundamental concepts in this class.	4.08	1.01

Table 14 outlines the descriptive statistics for Integration (IN), demonstrating strong positive agreement across all items. Participants gave the highest rating to learning activities assisting them in constructing explanations or solutions (INQ2: $M = 4.12$, $SD = 0.92$), followed by reflection on course content and discussions helping learners understand fundamental concepts (INQ3: $M = 4.08$, $SD = 1.01$) and combining new information to answer activity questions (INQ1: $M = 4.06$, $SD = 1.00$). Overall, the findings indicate positive perceptions of cognitive integration.

Table 15 – Mean (M) and Standard Deviation (SD) for Resolution (RE)

ITEM	M	SD
REQ1 I can describe ways to test and apply the knowledge created in this course.	3.88	0.88
REQ2 have developed solutions to course problems that can be applied in practice.	3.83	0.96
REQ3 I can apply the knowledge created in this course to my work or other non-class related activities.	3.92	0.88

Table 15 presents the mean and standard deviation values for resolution. The item with the highest mean score was REQ3, “I can apply the knowledge created in this course to my work or other non-class related activities,” with $M = 3.92$ ($SD = 0.88$), followed by REQ1 with $M = 3.88$ ($SD = 0.88$). The lowest mean score was recorded for REQ2, “I have developed solutions to course problems that can be applied in practice,” with $M = 3.83$ ($SD = 0.96$). Overall, the findings suggest that learners were more likely to apply knowledge from the course to work or activities outside the class, while developing practical solutions to course problems was comparatively less reported.

Exploratory Statistics

According to He (2024), correlation is a statistical technique that shows how strongly two variables are related to each other or the degree of association between the two. It's a common tool for describing simple relationships without making a statement about cause and effect. This section presents data to answer the research question on correlation. To examine the associations between facilitation and the three dimensions of online presence, Pearson's correlation analysis was conducted using SPSS. The analysis was interpreted as associative and does not establish causality. Results are presented separately in Table 16 below. The coefficient is significant at the .05 level and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0.

Findings for Relationship between facilitation and online presence

This section presents data to answer Research Question 4: Is there a significant association between facilitation and teaching, social, and cognitive presence?

H₀₂: There is no Significant relationship between facilitation and online presence

Table 16 – Correlation between Facilitation and Online Presence Dimensions

		TEACHING	SOCIAL	COGNITIVE
FACILITATION	Pearson Correlation	.795**	.685**	.766**
	Sig. (2-tailed)	<.001	<.001	<.001
	N	170	170	170
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 16 reports positive associations between facilitation and the three dimensions of online presence. Facilitation was strongly associated with teaching presence ($r = .795$, $p < .001$), social presence ($r = .685$, $p < .001$), and cognitive presence ($r = .766$, $p < .001$). These correlations indicate statistical association and should not be interpreted as evidence that facilitation causes changes in any dimension of online presence. Importantly, the teaching-presence correlation requires particular caution because facilitation is listed as a component of teaching presence in the instrument. The authors should verify whether the teaching-presence composite included the four facilitation items; if so, the reported $r = .795$ may be inflated by part-whole overlap and should be recalculated using non-overlapping scores.

Correlation analysis shows that there were high significant associations between facilitation and teaching presence ($r=.795^{**}$) and ($p<.001$), facilitation and social presence ($r=.685^{**}$) and ($p<.001$), and . facilitation and cognitive presence ($r=.766^{**}$) and ($p<.001$). Null hypothesis is rejected for H₀₂.

CONCLUSION

Summary of Findings and Discussions

The findings for RQ1 indicate differences in reported online presence scores across levels of study, with postgraduate learners reporting the highest mean ($M = 4.17$), followed by degree learners ($M = 3.98$) and diploma learners ($M = 3.50$). This indicates that learners' academic level is associated with differences in their reported online presence. The finding is broadly relevant to Rahmat et al. (2021), who examined online learning experiences across undergraduate and postgraduate groups.

For RQ2, learners generally reported positive perceptions of facilitation, particularly the instructor's role in maintaining engagement and encouraging productive dialogue, with item means ranging from 4.11 to 4.20. This finding is supported by Wang et al. (2025), who reported that active instructor involvement and collaborative activities were associated with stronger online engagement, and by Wei et al. (2024), who found that perceived teacher support was important for sustaining students' online engagement. The result is also consistent with Rogers' (1983) Facilitation Theory, which emphasises a supportive environment that encourages participation and learner autonomy.

For RQ3, learners reported generally positive perceptions across the teaching, social, and cognitive presence dimensions. Across the descriptive tables, respondents generally rated the dimensions positively, although timely feedback and some aspects of group cohesion received comparatively lower ratings. This finding is consistent with Gao et al. (2023), whose systematic review highlighted the educational value of the three Community of Inquiry presences, and with Rahmat et al. (2021), who emphasised the importance of interaction and engagement in online learning. The findings also support Garrison and Arbaugh's (2007) Community of Inquiry framework.

For RQ4, the findings showed positive and statistically significant associations between facilitation and teaching presence ($r = .795$, $p < .001$), social presence ($r = .685$, $p < .001$), and cognitive presence ($r = .766$, $p < .001$). This finding is consistent with Gao et al. (2023), who highlighted the role of structured facilitation within the Community of Inquiry framework, and with Wang et al. (2025), who demonstrated the importance

of active instructor involvement for online engagement. These findings support Rogers' (1983) Facilitation Theory, Vygotsky's (1978) Social Constructivism, and Garrison and Arbaugh's (2007) Community of Inquiry framework.

Overall, the findings indicate that facilitation is positively associated with the three measured dimensions of online presence. Because the study used a cross-sectional convenience sample, these associations should not be interpreted as causal effects. Taken together, the results suggest that effective guidance, interaction, participation, and knowledge construction are important features of a meaningful online learning environment.

IMPLICATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Theoretical and Conceptual Implications

The findings support Rogers' (1983) Facilitation Theory, which emphasises a supportive learning environment that encourages participation and learner autonomy. They also support Vygotsky's (1978) Social Constructivism, which highlights the importance of interaction and social support in learning.

In addition, the significant positive relationships between facilitation and teaching, social, and cognitive presence support the Community of Inquiry framework proposed by Garrison and Arbaugh (2007), which views these three presences as important elements of an effective online learning environment. Therefore, the findings provide empirical support for the conceptual framework by demonstrating significant positive associations between facilitation and the different dimensions of online presence.

Pedagogical Implications

The findings suggest that instructors should strengthen active facilitation in online learning. Instructors should provide clear guidance, encourage productive dialogue, maintain learner engagement, and support interaction among participants. This is consistent with Vygotsky (1978), who emphasised learning through social interaction, and Rogers (1983), who highlighted the importance of a supportive learning environment. In line with Garrison and Arbaugh (2007), online teaching should also provide opportunities for learners to interact, reflect, discuss ideas, and construct knowledge. These practices can strengthen teaching, social, and cognitive presence.

Suggestions for Future Research

Future research could examine why online presence differs across levels of study, particularly among diploma, degree, and postgraduate learners. Future studies could also use larger samples and participants from different institutions and educational settings to provide broader evidence. Qualitative or mixed-methods approaches could explore learners' experiences of facilitation and online presence in greater depth. Future researchers could also examine other variables, such as learner engagement, motivation, satisfaction, and learning outcomes, to provide a more comprehensive understanding of facilitation and online presence.

Methodological Limitations

Several methodological limitations should be considered when interpreting the findings. First, the use of convenience sampling limits the representativeness of the sample and the generalizability of the findings beyond the respondents included in the study. Second, the cross-sectional design permits examination of associations but does not establish temporal or causal relationships. Third, the study reports respondents from Malaysia and outside Malaysia, but the manuscript does not provide sufficient information on recruitment procedures, the institutions represented, inclusion criteria, the characteristics of respondents studying outside Malaysia, the data-collection period, response rate, or ethical approval and informed consent. These details should be reported in a revised version to improve transparency and reproducibility. Finally, because facilitation is conceptually related to teaching presence and is explicitly listed as a component of teaching presence in the instrument, the reported correlation between facilitation and teaching presence should be interpreted cautiously. If the teaching-presence composite includes the same facilitation items, part-whole overlap may inflate the correlation. The authors should report precisely how each composite score was

calculated and, if necessary, reanalyse teaching presence using non-overlapping items.

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APPENDIX

ODL-Community of Inquiry Survey Instrument

(teaching, social and cognitive presence)

This instrument is adopted from Garrison & Arbaugh (2007)

SECTION	VARIABLE (TYPE OF PRESENCE)	CONSTRUCT	ITEM INDICATOR	NO OF ITEMS
B	TEACHING	Facilitation	4	4
		Design & Instruction	3	6
		Direct Instruction	3	
C	SOCIAL	Affective Expression	3	9
		Open Communication	3	
		Group Cohesion	3	
D	COGNITIVE	Triggering Event	3	12
		Exploration	3	
		Integration	3	
		Resolution	3	
		TOTAL		31

Facilitation (F)

ITEM	1	2	3	4	5
FQ1 The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.					
FQ2 The instructor helped to keep course participants engaged and participating in productive dialogue.					
FQ3 The instructor helped keep the course participants on task in a way that helped me to learn.					
FQ4 Instructor actions reinforced the development of a sense of community among course participants.					

Design & Instruction (DES)

ITEM	1	2	3	4	5
DESQ1The instructor clearly communicated important course topics					
DESQ2The instructor clearly communicated important course goals.					
DESQ 3The instructor provided clear instructions on how to participate in course learning activities.					

Direct Instruction (DIR)

ITEM	1	2	3	4	5
DIRQ1. The instructor clearly communicated important due dates/time frames for learning activities.					
DIRQ2. The instructor encouraged course participants to explore new concepts in this course.					
DIR3. The instructor provided feedback in a timely fashion.					

SECTION C- SOCIAL PRESENCE

Affective Expression (AE)

ITEM	1	2	3	4	5
AEQ 1 Getting to know other course participants gave me a sense of belonging in the course.					
AEQ2I was able to form distinct impressions of some course participants.					
AEQ 3 Online or web-based communication is an excellent medium for social interaction.					

Open Communication (OC)

ITEM	1	2	3	4	5
OCQ1 I felt comfortable conversing through the online medium.					
OCQ2 I felt comfortable participating in the course discussions.					
OCQ3 I felt comfortable interacting with other course participants.					

Group Cohesion (GC)

ITEM	1	2	3	4	5
GCQ1 I felt comfortable disagreeing with other course participants while still m a sense of trust.					
GCQ2 I felt that my point of view was acknowledged by other course participants.					
GCQ3 Online discussions help me to develop a sense of collaboration.					

SECTION D-COGNITIVE PRESENCE

Triggering Event (TE)

ITEM	1	2	3	4	5
TEQ1 Problems posed increased my interest in course issues.					
TEQ 2 Course activities piqued my curiosity					
TEQ 3I felt motivated to explore content related questions.					

Exploration (EX)

ITEM	1	2	3	4	5
EXQ1 I utilized a variety of information sources to explore problems posed in this course.					
EXQ2 Brainstorming and finding relevant information helped me resolve content related questions.					
EXQ3 Online discussions were valuable in helping me appreciate different perspe					

Integration (IN)

ITEM	1	2	3	4	5
INQ1 Combining new information helped me answer questions raised in course activities.					
INQ2 Learning activities helped me construct explanations/solutions.					
INQ3 Reflection on course content and discussions helped me understand fundamental concepts in this class.					

Resolution (RE)

ITEM	1	2	3	4	5
REQ1 I can describe ways to test and apply the knowledge created in this course.					
REQ2 have developed solutions to course problems that can be applied in practice.					
REQ3 I can apply the knowledge created in this course to my work or other non-class related activities.					