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Research Article

Exploring the impact of instructor social presence on student engagement in online higher education

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ABSTRACT

Digital pedagogies have impacted traditional approaches towards teaching and as this phenomenon continues to expand, a clearer understanding of the role of instructors' social presence in online learning environments is imperative. Using a sequential explanatory mixed-methods design, this study investigates instructor social presence and its impact on student engagement at higher education institutions in the United Arab Emirates. The study includes data collected through a survey, which was distributed amongst faculty members (n=30), followed by several in-depth interviews. The study explores the relationship between constructs of instructor social presence and student engagement. Findings suggest that instructor social presence positively influences student engagement and attrition. The study also identifies different strategies and barriers instructors face in establishing their online social presence. The study has practical implications for stakeholders and curriculum designers seeking to improve and enhance the learning outcomes in online education.

Keywords: higher education, social presence, student engagement, community of inquiry

INTRODUCTION

Nowadays, the field of education has become somewhat reliant upon and influenced by digital pedagogies, and these have transformed learning environments in higher education (Haugsbakken et al., 2019). With the inclusion of technology and a shift to online learning, there has been an increased reduction in the spatial and temporal problems associated with traditional personal to virtual instruction and seminars to webinars (Mishra et al., 2020; Panigrahi et al., 2018). The ability of teachers to effectively use technology in order to achieve learning outcomes in the classroom has paved the way for digital pedagogy (Howell, 2012). Pedagogy is the basis of the teaching profession and teachers' utilize different learning pedagogies for transformational teaching to impart adequate knowledge. Howell (2012) posits that social and pedagogical imperatives are the driving force of digital pedagogy, and he defines it as an attitude and aptitude towards acceptance of digital technologies. Digital technology coupled with educational technological tools becomes a beacon to guide our thinking in the 21st century (Charles & Hill, 2023).

Januszewski and Molenda (2008) define four parameters of educational technology: study and ethical practice for facilitating learning, facilitating learning and improving performance, creating, using and managing technology. Based on this definition, technology is managed by the teacher and the end users are students. Milton and Vozzo (2013) define digital pedagogy as a construction of knowledge based on problem-solving and development of higher order thinking skills. Digital pedagogy combines constructivist approach to form connectivity teaching approach, whereby teachers thoughtfully decide on the effective use of digital tools and the impact of digital tools on learning outcomes (Hill et al., 2023).

Digital teaching encompasses blended, hybrid, flipped, and fully online courses while allowing teachers to create and maximize learning possibilities. Blended and flipped learning techniques combine in-person encounters with online activities to deliver learning using a variety of modalities. This spatio-temporal coherence paves the way for virtual and distance education. Technological tools can be used in online learning synchronously and asynchronously depending upon the course design. Digital pedagogies involving Web 2.0 tools and social media foster student-centered learning, where the teacher acts as a facilitator for the dissemination of knowledge and relies on collaboration, interactivity and higher order thinking skills that significantly impact students' learning experience (Ansari & Khan, 2020; Dalvi-Esfahani et al., 2020; Sailin & Mahmor, 2017). With the advancement in teaching methodologies, developmental changes in teachers' and students' lived experiences due to the inclusion of technology, there is a need to embrace digital technology in teaching and learning. With the global enforcement to adopt technology-enhanced learning, teachers' social presence in online education is reshaping to fit the needs of the digital natives. Digital pedagogy is not merely shifting a classroom online, rather it is flexibly applying technological tools for integrated education that can result in motivational and positive learning outcomes (Lin & Chen, 2017). Historical research on social presence in technology initiated in late 1970's when the use of emails increased, and researchers continued to study the social capabilities of technology in communication. Over time, asynchronous computer-mediated communication was considered antisocial, however, Gunawardena (1995) argued that teachers' social presence can be matured between participants in online learning environments. Garrison et al. (2000) pushed this thinking forward and developed the community of inquiry (CoI) framework that not only recognized social presence but also elicited teaching presence.

It is important to differentiate between the two distinct concepts of 'teaching presence' and 'teacher social presence'. *Teaching presence* involves instructional design, building understanding and direct instruction (Lansangan et al., 2022). On the other hand, *teacher social presence* refers to teachers' competence to establish interpersonal relationships and create a sense of community in an online learning environment (Richardson & Swan, 2019). It also involves teachers' deliberate efforts in establishing learning interactions without physical presence (Murtafi'ah & Arvenina, 2021). With the unprecedented transition to online learning, and teachers' meagre professional development, teaching materials were converted to a format suitable for online delivery (Dwivedi et al., 2020), henceforth, the experimentation with remote learning initiated. This posed challenges for teachers and students alike to reinvent themselves technologically in record time (García-Morales et al., 2021). Research published post-pandemic has created an impact on the future of education by highlighting the need for broadening skills and competencies of the existing workforce and critical digital literacies of educators and students (Bayerlein et al., 2021; Lakkala et al., 2021) and retaining online and distributed workplace arrangements with specific content to motivate and engage students and encourage collaborative learning (Agrawal et al., 2020; Dwivedi et al., 2020). Therefore, it is an impetus to highlight the importance and role of instructors' social presence in digital education.

The transactional distance associated with digital pedagogies can be reduced by understanding instructors' social presence in online learning (Song et al., 2019; Zilka et al., 2018). CoI framework was the first to highlight the importance of teaching presence despite not fully delineating the aspects of teachers' social presence in online learning. Zilka et al.'s (2018) study determined a link between teacher presence and social presence on one hand and feelings of threat and isolation deterring motivation in virtual and blended learning spaces. This sense of isolation among students impacts their ability to learn, interact and engage. This cold and deterred face-to-face communication among teachers and students have led to the role of strong teacher presence by engaging learners in meaningful learning experiences. Another cross-sectional study at undergraduate level discovered responsiveness, connectedness and facilitation as key themes in online learning (Conklin & Dikkers, 2021). Furthermore, Molinillo et al. (2018) suggested social presence and teacher-student interaction positively influence active learning through social engagement.

On the contrary, Xu et al. (2020) discovered that behavioral and cognitive engagement are higher with instructor facilitated groups instead of emotional engagement. Consequently, Kuh (2003) and Moore (1989) postulated factors affecting student engagement, which will be utilized in this study. Furthermore, the five key components of online instruction mentioned by Ringsmuth (n. d.) are communication, expectation, consistency, organization, and relationships. For the purpose of this study the authors will explore instructor social presence in higher education and its impact on student engagement, which determines student

success. Garrison et al. (2000), in their CoI theoretical framework have come forward with three concepts of social, cognitive, and teaching presence. This framework is most widely accepted for online teaching and learning (Richardson et al., 2017; Stenbom, 2018) and acknowledged to trigger critical thinking, problem solving and discourse. The relationship between student engagement and blended learning using CoI framework was investigated by Vaughan (2020). This framework provided seven principles for designing and facilitating a blended learning approach to enhance student engagement.

The study was conducted at higher education institutions in the United Arab Emirates (UAE). Chaudhry et al. (2021) found that the UAE students received quality education and information amidst the pandemic crisis. Moreover, the transition from conventional learning to online learning for higher education students was not arduous since they were already using learning management systems (LMSs) for course materials, file sharing and online exams, which owed to the success of this mode of learning. However, the quality of education stigma in this mode of education has always prevailed. Furthermore, it was also observed in studies conducted in higher education in the UAE that e-learning opportunities need to solidify more in practice and policy (Alblooshi & Hamid, 2019; Salloum et al., 2019). Instructors' professional development are indicators of course quality, learning outcomes as they facilitate student learning (Gurley, 2018; Wang & Stein, 2021). Moreover, teachers' preparation and professional development for conducting online lessons could range from formal certification courses to informal on-the-job training (Dereshiwsky, 2013).

A considerable amount of literature on CoI framework has revealed the positive effects of cognitive, social and teaching presence in online instruction (Gurley, 2018; Thomas & Thorpe, 2019) in relation to self-efficacy and motivation of learners, however, it is time to make sense of what is instructor social presence in online learning and how an effective online experience (Castellanos-Reyes, 2020; Richardson & Lowenthal, 2017a) could improve learner's engagement in online classrooms in synchronous and asynchronous learning in higher education (Khan et al., 2017). Furthermore, the effects of instructors' social presence need to be substantiated with empirical evidence (Holbeck & Hartman, 2018).

First, the study delves to investigate the facilitatory and social presence of instructors with a distinctive theoretical lens on CoI and social constructivism. Previous studies have investigated this phenomenon from students' perceptions of teaching presence quantitatively (Gurley, 2018; Nolan-Grant, 2019; Wang & Stein, 2021), therefore, this study will investigate perceived instructors' beliefs towards teachers' social presence and students' engagement in online learning (Kennedy, 2020) in higher education colleges using mixed methods design.

Furthermore, Wut and Xu (2021) recommended further studies on social presence and teacher interaction in online learning need to be carried out in different demographic locations since online classrooms may serve as a future learning trend, Bolliger and Martin (2018) and Zilka et al. (2018) identified a need for focus on student engagement in in blended and online courses with a focus on instructors' perceptions at undergraduate level.

Moreover, it is essential to examine how student engagement may change with instructors' changing roles, support provided and teaching experience (Xu et al., 2020). This study is unique in the UAE context intending to fill the gap in literature by investigating instructor social presence in higher education and its impact on student emotional, behavioral, and cognitive engagement using a mixed methods design at higher education institutions in the UAE.

The concept of teacher social presence in digital pedagogies is not relatively new and has been discussed by Baker (2010) and Swan (2003), however, the dynamics of teaching presence has significantly altered in the modern era. Based on the practical guidelines on effective online courses by Fiock et al. (2021) and CoI framework (UAE Vision, 2021), the purpose of this study is to investigate the instructors' perspectives and experiences on their social presence in online classrooms and its impact on student engagement at higher education institutions in the UAE. This work builds on the knowledge of previous research in digital education based on the social presence of teachers and students (Gurley, 2018; Wang & Stein, 2021). The purpose of this study is to investigate instructors' perspectives of social presence and student engagement in online education at the higher education level. Furthermore, the study will explore instructors' perspectives of social presence and best practices needed to develop social presence. The following research questions and hypotheses will guide the study:

RQ1. What are instructors' perceptions about online student engagement in higher education?

RQ2. Does instructors' social presence impact student engagement in online classrooms at higher education level in the UAE?

RQ3. What instructional practices are deemed most important by instructors to establish their social presence in higher education?

Significance of the Study

Teacher social presence is a key factor that contributes to student engagement and student attrition (Hoi & Hang, 2021; Khan et al., 2017) as it gives a feeling of connectedness. The COVID-19 pandemic has to be understood as a catalyst to analyze the educational change towards more flexible models and changes (Rapanta et al., 2020). The disruptive impact of COVID-19 and the availability of digital technologies has provided an unprecedented opportunity for transformation of higher education and this phenomenon is here to stay (García-Morales et al., 2021). In the UAE's higher education sector, various courses at undergraduate level are being taught online or have a digital component like flipped, blended, or hybrid activities for completion of the course. As a consequence, understanding technology integration and its effects on learning outcomes is a prerequisite for effective online teaching. Teacher social presence has seldom been explored in online higher education, but its importance cannot be denied (Conklin & Dikkers, 2021; Song et al., 2019). Furthermore, using CoI framework it was statistically found that teachers' social presence scored differently with two identical online courses with different instructors (Fiock et al., 2021). Hence, it is significant to explore the phenomenon with different frameworks and theories like CoI, cooperative learning, and social learning.

Contextually, this study is of importance to the UAE leaders and ministry of education since this kind of research can play a pivotal role in influencing online education in the UAE according to the 2030 education vision. Furthermore, this study will benefit the educators, students and policymakers in shaping curriculums for online education with student and teacher collaboration, student engagement and teaching presence in online education at the center of the paradigm. The findings of this study will be significant for future researchers who would like to delve into educational technology in the higher education sector and understand the role of teachers' in enhancing online learning.

LITERATURE REVIEW

Since this study focuses on faculty experiences of social presence in the online environment, two main bodies of literature were explored. First, the literature pertaining to faculty social presence in the online learning environment was analyzed, focusing on identifying issues related to faculty that had been studied thus far. Second, the literature regarding social presence and its impact on student engagement in the online learning environment was also collated and studied in order to determine how social presence was conceptualized and studied and with what populations these studies had been conducted. The theoretical framework comprises social constructivism as a broad theory narrowing down to industry-specific relevant theories, which have given periphery reference to computer mediated social presence literature. Furthermore, thematic areas covered include social presence, students' social presence, teaching presence, student engagement and its effectiveness in online education in synchronous and asynchronous learning environments (Castellanos-Reyes, 2020; Gurley, 2018; Richardson & Lowenthal, 2017b) and its impact on student engagement. This analysis of the literature led to an identification of gaps and the analysis of digital pedagogies prevalent in the UAE.

Literature Review Methodology

This literature review was initiated using inclusion and exclusion criteria for the selection of relevant materials (**Table 1**). To ensure relevance, literature from the last six years were referenced in this study. The primary focus was to search for empirical and research-based studies in the literature along with seminal studies on different concepts and themes drawn from the literature. It was also noted that in many contexts online education is also referred to as digital education. Therefore, both terms were used interchangeably.

The following keywords words were used to identify empirical studies and conceptual literature germane to online learning: "online learning", "instructor social presence", "social presence + online learning", "digital

Table 1. Literature review criteria

Inclusion criteria	Exclusion criteria
Empirical & research-based publications	Conference proceedings
Published in peer-reviewed scholarly	Reports
Journals	Opinion papers
Doctoral dissertations	MOOCs
English language only	Not higher education
Only full-text articles	Blogs
Across all disciplines	
Higher education	

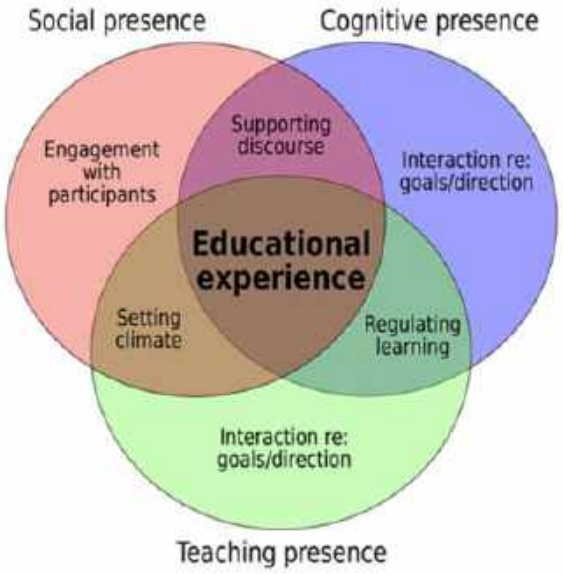

Figure 1. Elements of an educational experience (Garrison et al., 2010)

education and social presence", "student engagement and online learning", "student engagement + online education", "social presence in higher education", "faculty social presence", and "student engagement and instructor social presence". These keywords were used in combination with each other to obtain a comprehensive body of literature. The search on literature was limited to online learning in higher education.

Community of Inquiry Framework

CoI framework was developed to depict the ideal components of learning in virtual education, and it is extensively used as a conceptualization guide in digital learning. Research has affirmed that CoI framework is congruent with the principles of social and collaborative constructivism in higher education (Garrison, 2007; Gurley, 2018; Swan, 2019; Zigelman, 2018). In CoI framework teachers and students work collaboratively for an educational purpose (Swan et al., 2009). Direct instruction alone is insufficient for knowledge construction; therefore, critical thinking and practical inquiry are at the heart of CoI (Shea et al., 2010). CoI was developed as an interactional model for online teaching and included three elements: social presence, cognitive presence, and teacher presence. These elements are interdependent and facilitate discourse, content development, and create an interactive learning experience (Garrison et al., 1999).

The model illustrates how educational experience occurs with the intersection of social, cognitive and teaching presence (**Figure 1**). According to Garrison et al. (1999), educational experience is the combination of social, cognitive and teaching experience. An effective systematic approach that combines all these elements among teachers and students can lead to a collaborative learning and creation of new knowledge in an online learning environment.

Social presence supports the educational experience by enabling the participants to engage with the community and communicate purposefully (**Figure 2**). This deals with developing interpersonal relationships by trusting the environment and revealing the true self that could instigate, sustain and encourage critical thinking among a community of learners (Garrison et al., 1999).

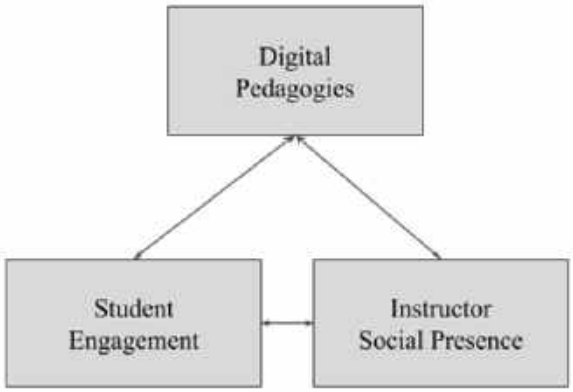

Figure 2. Relationship of key concepts (Source: Authors)

The group interactions must be appealing and intrinsically rewarding that could lead to increased academic, social and institutional gain resulting in increased persistence and course retention (Barnett-Allen, 2017). Cognitive presence is defined as the extent to which participants can construct meaning through reflection and discourse in sustained communication (Garrison et al., 1999). Teaching presence is the designing, facilitation, context and direction of social and cognitive processes in the creation of a course that could produce worthwhile learning outcomes (Garrison et al., 1999). It also includes organizing subject matter, syllabi, and content to provide student-teacher connection and facilitate active learning (Garrison & Arbaugh, 2007). Social presence in online education does not guarantee that communication exists with technological tools due to several factors that can hinder their participation. According to Harnett et al. (2011), lack of student motivation could be due to insufficient guidance, time constraints or lack of relevance to the subject matter. To overcome this struggle of establishing student presence, CoI framework relies on teacher presence to establish the expected standards, expectations, and outcomes of the course. As mentioned by Garrison and Arbaugh (2007), teacher presence includes designing the instructional materials, direct instruction, and facilitation. The teacher acts as a leader or role model who encourages student participation, discourse, and guides all along the learning journey. The research study will determine the instructors' perspectives of their presence in online education, which is a determinant of student satisfaction and a binding unit in CoI model (Garrison et al., 1999, 2010).

Teaching Presence & Teacher Social Presence

Online courses require not only course management but the added responsibility of instructor social presence to facilitate discourse, student satisfaction and retention in the online learning environment. Therefore, the quality of online education is directly related to student satisfaction and learning outcomes (Richardson et al., 2020). Teaching presence is seen as a predominant predictor of student satisfaction, perceived learning and sense of community (Garrison & Arbaugh, 2007). In addition, a recent quantitative study revealed a strong correlation between teaching presence, perceived learning and student satisfaction in online course settings while predicting that each dimension of teaching presence determines students' outcomes in fully online courses (Caskurlu et al., 2020). Another study also found that learning satisfaction is related to instructor social presence. Further, online learning self-efficacy and effect of instructor presence is dependent on content structure and is stronger in unstructured content (Lim et al., 2021).

Facilitating social presence in online learning requires a different skill set compared to traditional classrooms. Research suggests teacher social presence in online classrooms demands more complex forms of presence like participation in online forums, responsiveness, discourse facilitation, connectedness and empathic behaviors that can motivate learners (Conklin & Dikkers, 2021; Mandernach et al., 2006). Additional demands to the traditional role of teacher presence add to the complexities of online teaching and make it cumbersome for many teachers. Furthermore, multiple roles and added responsibilities and practices require more effort from teachers and reduce teacher preparation time compared to face-to-face lessons (Hogan & McKnight, 2007; Littlejohn, 2021). A recent study revealed that intrinsic motivation and emotional factors have a significant impact on classroom instruction, moreover, motivational factors are correlational to occupational stress (Panisoara et al., 2020).

It was also concluded by Wang et al. (2021) that teachers need to facilitate students' discourse more frequently during an online learning process, provide more feedback, and design course activities using technological tools to provide students with more comprehensive learning experience. Teacher social presence is directly correlated to student success, cognitive and social presence and student social presence (Law et al., 2019; Lim & Richardson, 2021; Shea et al., 2010) and student engagement (Stone & Springer, 2019). Furthermore, teaching presence was found to have a strong positive relationship with student satisfaction and perceived learning, which indicates it to be a good predictor of student learning outcomes (Caskurlu et al., 2020). Therefore, this indicates the importance of considering teachers' social presence as a key marker when designing course materials and formulating curriculum with an approach to collaboration, interaction and experience in constructing students' knowledge.

Research has demonstrated the positive outcomes of professional development to combat the challenges of online education in higher education (Kebritchi et al., 2017; Richardson et al., 2020). Furthermore, teachers' spirit and enthusiasm, duties and obligations influence teacher motivation and determine the success of learning (Aliyyah et al., 2020). Other notable factors that positively impact the teacher-student relationship in online learning are teacher self-disclosure and teacher immediacy behaviors and their social presence, which increase learner satisfaction and ultimately increase knowledge gain (Khan & Rafi, 2020; Song et al., 2016, 2019). In an online learning environment teacher social presence is one such debatable area that still needs exploration to fit the needs of the evolving educational trends (Oyarzun et al., 2018), which could include online discussions (Kilis & Yildrim, 2019), designing course activities (Caskurlu et al., 2020) and exploring competence, autonomy and connectedness and online gamified learning (Mahmud et al., 2020).

However, Garrison et al. (2010) described a conceptual lack of consensus on the constructs of teaching presence. It was further highlighted that teaching presence may be an artefact of the nature of the student sample and educational context. Inspired by Anderson et al. (2001), Rapanta et al. (2020) identified that learning activities are a combination of three types of teacher presence; social, cognitive, and facilitatory, which depend on how teachers are teaching their courses and establishing a teacher-student relationship. It is of utmost importance to understand the preparedness of teaching professionals, invest in teacher professional development for online pedagogies that enhance teacher productivity (Kirschner, 2015; Rapanta et al., 2020). Furthermore, Kirschner (2015) argued that technology enhanced learning is the new horizon, where learning has to be effective, efficient, and enjoyable facilitated by the technologies available to the teacher. Instructor presence and social presence were described as interrelated in virtual and blended classrooms by Zilka et al. (2018). Agreeing with Kirchner (2015), they argued that creating a learning environment supports learner attrition and develops an active learning community, which was also supported by the study of Stone and Springer (2019). Instructor presence is the specific immediacy actions and behaviors taken by the instructor to project him/herself as a real person in terms of frequency of communication and interaction with their students depending on their social presence needs (Lowenthal & Dunlop, 2018; Oyarzun et al., 2018; Richardson et al., 2016).

On the contrary, several studies have identified a lack of acknowledgement in the teacher presence and multiple roles they play in online learning as stated in CoI framework (Kebritchi et al., 2017; Richardson & Lowenthal, 2017a). Furthermore, Pollard et al. (2014) argued that instructor social presence needs to be added as a separate construct in CoI framework. Research has identified a need for strategies, types of strategies for establishing instructor social presence in online classrooms, which is more complicated than previously thought, making sense of what an efficient online experience is and designing such experience based on students' situational needs like instructional tasks, group size previous relationships and changing teacher roles (Fiock, 2020; Lowenthal & Dunlap, 2018, 2020). The importance of instructor social presence can further be emphasized by the study of Conklin and Dikkers (2021) who revealed four major themes for instructor social presence; connectedness, responsiveness and coaching, chunking materials for online teaching and empathic facilitation.

Instructor Social Presence & Student Engagement

Teacher facilitation affects students' performance in synchronous and asynchronous settings and is directly related to student engagement and motivation (Hu & Li, 2017; Stone & Springer, 2019; Xu et al., 2020). Seldom research has been conducted on the effects of teacher role in student engagement in the context of

online discussions (Xu et al., 2020). Several conditions foster student engagement, success and retention in online learning, nevertheless, this perennial issue remains an area under research in higher education (Bowden et al., 2021). Due to space and time separation in online learning, it is difficult to predict the level of engagement in learners since successful learning is closely related to how well students are engaged, how much they are engaged and how teachers can engage effectively (Hu et al., 2016). Online learning is a complex phenomenon, where learners get distracted easily and there is no assurance of any active learning and students fail to self-regulate (Zimmerman, 2002).

With the inclusion of technology, researchers are interested in investigating the effectiveness of online learning and figuring out methods that enhance learning achievement and teachers' support (Dwivedi et al., 2019). Furthermore, research suggests that students learning in small groups exhibit higher levels of engagement and learning outcomes compared to students who learn individually (Chen et al., 2018). Similarly, Dwivedi et al. (2019) stated that lack of social presence results in low student engagement and dropout from online courses. Amongst the four dimensions of student engagement, i.e., affective, emotional, cognitive, and behavioral; behavioral and cognitive engagement with instructor facilitation increases and improves student engagement. Furthermore, behavioral engagement enhances self-efficacy and self-esteem among students (Bowden et al., 2021; Xu et al., 2020). Nonetheless, another experimental study depicted a significant impact of emotional engagement on student achievement, therefore, faculty could improve students' self-esteem to guarantee learning (Wang & Sui, 2020). However, Pérez-López et al.'s (2020) research results indicate that engagement is a process that is an outcome of active collaborative learning, perceived enjoyment and student satisfaction. Therefore, it is teachers' responsibility to encourage active collaboration to make students engaged and satisfied to improve their performance. As a result, it can be concluded that instructors' active social presence, being there and the ability to provide a real platform for interaction, asking questions and participation enhances the behavioral engagement, whereas taking the initiative to apply the knowledge acquired in different situations by selecting and evaluating knowledge will enrich the cognitive engagement (Hu & Li, 2017). Online learning with effective engagement and collaborative strategies can enhance teacher-student relationships, which can increase student engagement and it influences students' academic development (Qureshi et al., 2021). Park and Kim (2020) also reiterated with similar conclusions that student-instructor interactions promote students' perceptions of instructor social presence, which eventually enhances student engagement and satisfaction in online classes. In contrast, studies show that there is not a significant effect of teacher facilitation on students' emotional engagement (Xu et al., 2020). Furthermore, another quantitative study at the tertiary level analyzed that cognitive and social engagement are not the only predictors of student success (Bowden et al., 2021).

CoI by its profundity analyzes the depth of educational experience by social, cognitive and teacher presence. Teachers and learners can establish their presence for effective learning outcomes. The literature review has highlighted certain under-researched areas to bridge the gap in the existing body of literature. Previous studies have utilized CoI framework to investigate the students' perceptions of teachers' social presence (Gurley, 2018; Zilka et al., 2018) and highlight a need for research from teachers' perspectives (Gurley, 2018). Therefore, this study aims to investigate this phenomenon from instructors' perspective using a mixed methods research design.

METHODOLOGY

This study was conducted to understand instructors' perspectives and experiences about their social presence in online learning and how it impacts student engagement. The study was carried out with faculty members of different higher education institutions in the UAE, who have taught online courses in the last few years. Having researched prior studies in this field that mostly adopted a single method of data collection, this study is unique as it involves mixed-methods research with a sequential explanatory design. The rationale for using mixed-methods sequential explanatory design for this study was to include opportunities for exploration of quantitative data in more detail. Also, priority and weight will be given to qualitative data collection and analysis in the study. As mentioned by Creswell (2002), this type of design has two distinct phases; quantitative followed by qualitative.

Quantitative Phase

In the first phase of the study, we disseminated the closed-ended Likert scale survey instrument using a convenience sampling strategy with instructors teaching at different higher education institutions in the UAE. The survey was adapted and modified from existing surveys developed by pioneers of CoI framework, which measured educators' perceived teaching presence in online and blended learning, Moore's (1989) interaction theory and Australasian survey of student engagement by Coates (2008). Our modifications to the survey included question items related to teacher social presence and student engagement. The quantitative data was administered through Qualtrics to ensure the security and anonymity of the data. The survey included five-point Likert type scale questions that were divided into four major constructs:

1. Faculty demographic information.
2. Faculty survey, which included sub-sections:
    a. Student behavioral engagement (SBE),
    b. Student psychological engagement (SPE), and
    c. Student cognitive engagement (SCE).
3. The next section of the survey included modifications to the original survey constructs, i.e.,
    a. Design and organization,
    b. Facilitation, and
    c. Direct instruction (These constructs measured teaching presence, therefore, more options were added to the questionnaire to include instructor social presence).
4. Section 4 included challenges in establishing social presence. This cluster of constructs will help solicit the needed information from the instructors, which will further augment the qualitative data.

The adapted survey was reviewed for reliability and face validity by quantitative analysts who were not part of this study. Both reviewers have been working in quantitative analysis for the last four years. Few revisions were advised before the beginning of the pilot study, which included reduction of survey items, rewording questions and scale type of the questions and being more specific with the newly added items related to instructor social presence. The sample population for the quantitative research phase was a convenience sampling including educators from teaching in all disciplines to gather a wide range of information from the participants. The internal validity and reliability of the survey instrument was measured following the collection of pilot study data; and the Cronbach's alpha returned a value of 0.8 making it a reliable tool for data collection. The findings from this phase augmented the qualitative phase. The validity in this research is established using a rigorous and systematic approach to data collection and by using triangulation. Henceforth, for the pilot study, the sample size for the quantitative phase of the study was 55, however, only 30 responses were complete and used for the analysis phase (n=30). The goal of this survey was to identify the factors that impact instructor social presence on student engagement. Further, it examined instructors' perception of social presence in online learning and the challenges they face in establishing their online presence.

Qualitative Phase

The qualitative phase was conducted as a follow-up to explain the quantitative results. In this follow-up, the researchers explored instructors' perspectives on social presence in online education using in-depth interviews as a data collection tool. As a follow-up to the quantitative data, one-on-one interviews were carried out with participants to explore instructors' perspectives and experiences of social presence in digital education. This aimed to address the thoughts, beliefs, issues, and realities they face in online or digital education. The numerical data paved the way for probing into how instructors perceive social presence in online classrooms, the challenges and barriers they face in engaging students online, how effective engagement can influence student learning outcomes and how can online learning be more advantageous to students in the changing times. From the results of the quantitative phase, probing interview questions were formed to explore further details from the participants. Interviews assisted in understanding the central phenomenon with open-ended questions, where the participants can articulate their experiences

Table 2. Demographic characteristic of sample of pilot study (n=30)

Demographics		Frequency (f)	Percentage (%)
Gender	Male	8	26.7
	Female	22	73.3
Age	Under 30 years old	2	6.7
	Between 31-40 years old	9	30.0
	Between 41-50 years old	12	40.0
	Between 51-60 years old	7	23.3
Years of experience in higher education	1-5 years	3	10.0
	6-10 years	12	40.0
	11-15 years	3	10.0
	16 years above	11	36.7
Teaching status	Part-time	1	3.3
	Full-time	29	96.7
Program currently teaching	General studies	3	10.0
	Engineering	4	13.3
	Computer sciences	1	3.3
	English communications	7	23.3
	Other	5	16.7
Level of program teaching	Diploma	2	6.7
	Undergraduate	17	56.7
	Postgraduate	9	30.0
Number of years teaching online		2.7 (M)	1.4 (SD)
Number of hours spent teaching online per week		10.63	7.10

unconstrained by any biases and preconceived notions (Creswell, 2002; Creswell & Guetterman, 2019). In addition, it explored how social presence in online education shaped student engagement, its repercussions with reasons and explanations to develop further. The collected data was transcribed for analysis.

For this phase, three participants were purposefully selected from those who completed the survey. To provide richness and depth to the data gathered, those educators were selected who have taught English and general studies courses fully online during the pandemic, have at least five years or above of teaching experience in higher education and still teach a few classes online. One-on-one interviews also offered data triangulation, providing unbiased data. The interviews were conducted via Zoom and video recorded. All interviews were transcribed verbatim, then a thematic analysis was performed of the text data.

Data Analysis

Congruent with the mixed methods sequential explanatory research design, the statistical analysis of the quantitative data was performed using SPSS. Subsequently, a thematic analysis of the qualitative findings was performed, and the results were merged. An attempt was made to address all research questions through quantitative and qualitative data collection methods. However, the qualitative interview questions were modified after the results of quantitative data. Qualitative data collection and analysis was given more priority during this study despite it being the second phase of the study. This decision was influenced by the purpose of the study to identify and explain instructors' perceptions on their social presence and its impact on student engagement in digital education. The first, quantitative phase focused primarily on revealing the external and internal factors that influence educators' social presence in online learning. Further, it discovered the impact of social presence in student engagement. The goal of the qualitative phase was to explain and interpret the findings received from the statistical results obtained from the first quantitative phase.

FINDINGS & DISCUSSION

Demographics

Table 2 summarizes the demographics of the participants in the study.

Correlational Analysis

Table 3 is based on the Spearman's rho correlational matrix, which elaborates the below findings:

Table 3. Spearman's rho correlation between study variables (n=30)

No	Variables	1	2	3	4	5	6	7
1	Student behavioral engagement	-	0.71**	0.64**	-0.24	-0.40*	-0.08	-0.14
2	Student psychological engagement		-	0.42*	-0.13	-0.39*	-0.19	-0.10
3	Student cognitive engagement			-	-0.32	0.03	0.18	0.15
4	Instructor social presence				-	0.34	0.29	0.07
5	Facilitation					-	0.69**	0.40*
6	Direct instruction						-	0.12
7	Challenges in establishing social presence							-

1. SBE has a significant positive correlation with SPE (r=0.71, p<0.01) and SCE (r=0.64, p<0.01). This suggests that students who are more behaviorally engaged in their learning are also more likely to be psychologically and cognitively engaged.
2. SPE has a significant positive correlation with facilitation (r=0.42, p<0.05) and a significant negative correlation with challenges in establishing social presence (r=-0.39, p<0.05). This suggests that students who are more psychologically engaged tend to perceive greater facilitation from their instructors and experience fewer challenges in establishing social presence.
3. SCE has a significant negative correlation with instructor social presence (r=-0.32, p<0.05). This suggests that students who are more cognitively engaged may perceive their instructor as less present or involved in the learning experience.
4. Instructor social presence has a significant positive correlation with facilitation (r=0.34, p<0.05). This suggests that students who perceive their instructor as more present and involved in the learning experience also tend to perceive greater facilitation.
5. Facilitation has a significant positive correlation with SBE (r=0.69, p<0.01). This suggests that students who perceive greater facilitation from their instructor are more likely to be behaviorally engaged in their learning.

Overall, the quantitative findings from this study demonstrate that instructor social presence and facilitation are closely related in the context of online learning and SCE. These results are in line with the study of Lim et al. (2021) that reinforces the importance of social presence in online learning. It was found from the descriptive statistics that educators agree to provide clear instructions on learning activities and important due dates for assignment submissions. However, some educators disagree in providing their contact details as an announcement on LMS. This was further discussed in the interview stage. Furthermore, some instructors believe that dry running online activities and personalization of course design is not applicable in their jobs, however, this comes under establishing their social presence. These results also mean that unstructured course content gives more liberty to instructors in establishing their social presence in online classes, which was also discussed in the study of Rapanta et al. (2020) who reiterated that different learning activities establish an effective teacher-student relationship. Specifically, students who are more behaviorally engaged tend to be more psychologically and cognitively engaged, and these forms of engagement are related to their perceptions of instructor presence and facilitation. Additionally, according to the survey with instructors, students who perceive greater facilitation tend to be more behaviorally engaged in their learning; essentially, SCE is negatively associated with instructor social presence. However, Pérez-López et al. (2020) research results indicated that engagement is the outcome of active learning and collaboration, perceived enjoyment, and satisfaction.

This research study explores educators' perceptions on social presence and student engagement, best practices for establishing student presence, the role of institutions in establishing social presence, effects of culture on student engagement. Although this study is limited to a small sample population, therefore, the findings from this study should not be generalized. Nonetheless, the results provide guidelines on how educators can design and develop their social presence, thus the results presented in this study try to fill the void in literature. Further to the quantitative findings, the faculty interviews in qualitative phase of the pilot study revealed several underlying themes out of which five themes were most important and they addressed the research questions. These themes were further divided into several subthemes discussed below.

Instructors' Perception of Online Student Engagement

This study found that the indicators of online student engagement differ for each faculty, though they firmly believe that students' performance is directly related to student engagement and motivation. Moreover, instructors' perceptions of online student engagement in higher education manifests several conditions like designing meaningful activities, where students feel the need to be involved. However, as mentioned by Dwivedi et al. (2019) and the faculty members also opined that measuring online student engagement is a challenge and further research needs to be conducted on enhancing learner achievement and providing support. All the participants laid emphasis on the use of cameras in online learning for effective student engagement. All of them were also discerned with the importance of students' voice and proclamation of their feelings about online learning. One of the participants said *for effective online learning and engagement we should design workshop style trainings to foster more collaborative learning as this will involve students and encourage engagement.* This is also reiterated in the findings of Park and Kim (2020) who believe that student-instructor interaction promotes student engagement. This theme answers the first two research questions.

Active Learning & Student Engagement in Online Education

Since researchers agree upon new pedagogies for online and digital education, it is imperative to understand faculty's readiness and preparedness to teach online. Active learning is one such concept that prepares teachers for interactive lessons. A recent study resulted in significantly higher scores for teaching, social and cognitive presence in online flipped learning and increased student engagement (Kay et al., 2019). These results support the findings from the interview and further elaborate the concept of active learning, which involves listening, speaking, reading, writing, and thinking skills (Yoder & Hochevar, 2005). Active learning has demonstrated how to improve learning outcomes and is promoted in higher education. One of the best methods to include active learning is collaborative learning. Research proves and the faculty also reported that collaborative learning coupled with a variety of technological tools makes learning meaningful and interactive, increases motivation and learning among peers, creates a positive environment and makes learning fun (Lim & Richardson, 2016; Mao, 2014). Also, Bao (2020) identified that faculty should use various methods to modify students' out of class tasks to strengthen students' active learning. Gamification of online learning by incorporating different game pedagogies promotes active learning and has reported to increase student academic performance and engagement, also helping develop more social connections than standard course settings (Chen et al., 2018).

Instructor Social Presence &d Impact on Student Engagement

Although social presence is a central concept in online learning, exactly in what ways it can be developed and analyzed, and impacts student engagement is yet to be explored (Patrick et al., 2020). Despite the critical importance of social presence in online learning, it remains under explored about what are the best strategies to develop it in online education. The findings from the in-depth interviews focused on instructors' emphasis on their role as a facilitator. This means that instructors believe appropriate facilitation and personalization, specifically designed curriculum, and instructional design for online classes is important for student engagement. These results agree with Lim et al. (2021) and Rapanta et al. (2020) who mentioned that teachers' facilitatory presence depends on teachers' relationship with students and the course contents. Moreover, one of the educators in response to a question replied that *for online instruction relevant and personalized teaching content is very important as this helps students to connect with their real world*.

The educators also accentuated the concept of being 'real' and building rapport in online classes, which is one of the central concepts of CoI framework, which can initiate problem solving and higher order thinking skills. Furthermore, one of the faculty insisted that for online education, *intrinsic motivation is more important as the students are behind the screen and it is difficult to motivate them extrinsically.* Intrinsic motivation refers to the drive to engage, the joy and satisfaction and the ambition to learn new knowledge (Gustiani, 2020) in online learning and it is one of the important factors for persistence in online learning. It was also echoed from the interview transcripts that course designers with their engaging and interactive materials can support intrinsic motivation. Teaching roles include but are not limited to facilitator, motivator, role model, learning community, and fostering problem solving abilities (Ulla & Perales, 2021; Vaishali & Misra, 2020).

Best Practices for Student Engagement

Martin and Bolliger (2018) researched that student engagement can be categorized into three types: learner-learner, learner-instructor, and learner-content engagement. The findings from the survey and interviews led to several sub-themes, which can be divided into these categories. Educators elaborated that learner-learner engagement can be achieved by differentiating activities, conducting student reflections, and sharing expectations. Learner-instructor engagement can be enhanced by establishing social presence, providing support, and providing helpful and constructive feedback on the learners' progress. Not surprisingly, Baker (2010) also found instructor social presence and instructor immediacy as a positive indicator of learner-instructor engagement. Contradictory to the findings postulated by Martin et al. (2018), the instructors in their interviews revealed that live synchronous web conferencing tools promote student engagement, which was rated low in the mentioned study. Learner-content engagement can be achieved by meaningful course design and activities, which can be based on CoI framework and according to the guidelines mentioned by Fiock (2020). The notion of best practices is varied and depends on the needs and background of the students, however, a certain array of instructional strategies that encompass CoI framework can be useful for online learning. The above-mentioned list is not exhaustive yet aligns with the framework and best suited for developing a community of learners and educators for optimum educational purposes. This theme addresses **RQ3** about best practices deemed appropriate by instructors to establish their social presence.

CONCLUSIONS

Although the potential limitation of this pilot study is the small sample size being confined to higher education faculty members only, universities must consider the practical implications for future unanticipated or a gradual shift towards online or hybrid education. Beginning from the findings of the quantitative survey, the study further used qualitative in-depth interviews using explanatory research design method to explain the findings of the study. The findings of this pilot study have highlighted the importance of instructor social presence and its impact on student engagement. Further, the study brings forth the importance of designing courses and activities that foster student engagement and give importance to social presence. Also, the study provides practical consideration on the implementation of online learning systems keeping the idea of community of learners. Furthermore, the study reveals from the participants that training and professional development, providing role models for establishing social presence is of utmost importance in delivering exemplary lessons to online students. The study recommends further exploration on students' perception of their engagement in online learning and how they perceive instructors' social presence in online learning. Findings also reveal that university students' basic educational needs like technology orientation, expectations, and digital infrastructure can foster an easier transition to online learning in future emergencies or planned intervention. The researcher strongly recommends higher education stakeholders to intervene in instructors' professional development and align it with the goals of CoI framework if educators must teach online courses.

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