Investigating Non-Traditional Graduate Students' Social Presence in Online Collaborative Activities: A Case Study

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Abstract
This case study explores the perceived social presence of 15 non-traditional graduate students engaged in a collaborative activity within a practice-oriented online course. Grounded in the Community of Inquiry framework and principles of collaborative learning, the activity was intentionally designed to include instructor facilitation, structured task design, group formation, and technology integration to support peer regulation. By analyzing multiple datasets, such as students' reflection papers and instructor-interview transcripts, the findings revealed that non-traditional students' self-regulation and team leaders' guidance led to the improvement of team dynamics and accountability. A majority of the team members held each other responsible in the group project. However, task complexity and time management remained challenges for the students. Notably, fewer than half of the students reported difficulty with specific sub-tasks of the group project, which was attributed to their insufficient foundational knowledge. Nevertheless, the findings emphasized the crucial role of instructor's support in team success and in addressing the students' knowledge gaps and misconceptions. The instructor provided constructive feedback on their formative assessments, encouraged them to leverage rubrics throughout the collaborative activity, and modelled best practices to support students during the collaborative activity. Moreover, team leadership emerged as an important factor that contributed to better team dynamics and purposeful interactions. This study offers practical and theoretical implications for instructional designers and course instructors seeking to create effective online collaborative learning environments for non-traditional graduate students.

Keywords: Non-traditional graduate students, social presence, collaborative learning, design elements, online course, case study

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Introduction

Integrating collaborative learning into online courses supports both academic learning and the development of professional skills (Bessette & Burton, 2014; Jung et al., 2023; Marutschke et al., 2019). Collaboration is a highly valued skill in the workplace as it fosters accountability and helps build interpersonal relationships (Goulart et al., 2022; Luengo-Aravena et al., 2024). Developing collaboration skills is particularly relevant for non-traditional graduate students, who often manage multiple responsibilities and bring diverse life and work experiences to their academic studies (Bauer et al., 2023). Online collaborative learning can help students develop soft skills, such as project management, communication, and adaptability, while also cultivating a sense of community (Jung et al., 2023). Soft skills or competencies such as these are not only academically beneficial but are also directly transferable to real-world professional environments, which makes collaborative activities a useful mechanism for enhancing both academic success and career readiness.

Central to effective collaborative online learning is the development of social presence, defined as the ability of learners to project themselves as real participants in an online environment (Garrison et al., 2000; Laal & Laal, 2012). In online settings, where physical cues are absent, social presence can help sustain student engagement and help build meaningful connections among and between students and teachers (Doo & Bonk, 2020; Miao & Ma, 2022; Molinillo et al., 2018). Simply put, student participation in online learning does not happen automatically, and as such, students and teachers must work toward the development of their own social presence to help themselves be seen by others in online learning environments (Zhao et al., 2014). For social presence to emerge, teachers and students in online environments must intentionally foster open communication, emotional expression, and group cohesion (Garrison et al., 2000). These elements are important for creating a collegial and supportive learning environment, which in turn can help facilitate more effective collaboration (Aragon, 2003; Zhao et al., 2014).

Despite the potential benefits of collaborative learning, students frequently encounter significant challenges (Boud & Bearman, 2024; Matee & Nkiwane, 2021; Zygouris-Coe, 2019). Common challenges include time management difficulties, technical issues, poor communication, unequal participation, and imbalanced workload distribution, especially in group projects, a prevalent online collaborative format (Nungu et al., 2023; Oyarzun & Martin, 2023; Zhu & Zhang, 2022). Unaddressed, these challenges create negative social and emotional experiences that directly undermine the development of a strong social presence. For example, poor communication and imbalanced workloads can breed resentment, causing students to feel frustrated and isolated from their peers rather than part of a cohesive group (D'Errico et al., 2016; Gonzales et al., 2023; Oyarzun & Martin, 2023; Sung & Mayer, 2012). This erosion of social presence can lead students to feel negative emotional experiences, such as lack of connectedness and engagement. One of the student groups that experience these challenges are the non-traditional graduate students. These are learners who are enrolled in their full- or part-time studies while managing their personal and professional commitments (Carreira & Lopes, 2021; Strutkel et al., 2023). Although many studies have explored the social presence of non-traditional graduate students in collaborative online learning environments (Chen et al., 2018; Jiang & Koo, 2020; Nungu et al., 2023), our study aims to build upon this foundation by specifically investigating how their perception of social presence is shaped by the intentional integration of collaborative design elements.

Review of the Literature

Collaborative Learning

Collaborative learning is an educational approach in which students work together in groups to solve problems, complete tasks, or construct knowledge through shared inquiry (Davidson & Major, 2014; Laal & Laal, 2012). This approach is particularly beneficial in courses that incorporate ill-structured, problem-based learning activities, where solutions are not predetermined and require critical thinking and negotiation among peers (Loyens et al., 2012; Kokotsaki, 2016). It encourages students to engage in open-ended dialogue and independent thinking as they work toward a common goal (Olivares, 2008; Yang, 2023). Thus, collaborative learning promotes knowledge-building communities where supportive teachers and peers help create and maintain an environment dedicated to the development and improvement of ideas (Scardamalia & Bereiter, 2010; Yang, 2023). Learning occurs as students immerse themselves in a context-specific process, exchanging ideas, negotiating meaning, and co-constructing understanding with their peers (Dillenbourg, 1999). This active exchange of knowledge not only deepens content comprehension (Erkens & Bodemer, 2019) but also fosters essential skills such as communication, perspective-taking, and problem-solving skills (Dowell et al., 2020; Järvelä & Häkkinen, 2002) that are necessary in both academic and professional settings (Dickerson et al., 2016; Dowell et al., 2020; Lin-Stephens et al., 2019).

Conditions that Enforce Collaborative Learning

Collaborative learning depends on five interrelated conditions: (a) positive interdependence, (b) promotive interaction, (c) individual accountability, (d) interpersonal and group skills, and (e) group processing (Kreijns et al., 2003; Laal & Ghodsi, 2012; Scager et al., 2017). These five interrelated elements have the potential to foster productive group dynamics and may help prevent issues like free-riding and social loafing. For instance, free-riding occurs when students in online groups reduce their effort because they feel that their individual contribution is unnecessary for the group's success (Kreijns et al., 2003). On the other hand, social loafing happens when students reduced their effort due to a decreased sense of personal impact on the group's outcomes (Kreijns et al., 2003). By intentionally integrating the five interrelated conditions of collaborative learning, instructors could possibly increase productivity and minimize disengagement behaviors such as free-riding and social loafing (Kreijns et al., 2003).

First of all, positive interdependence motivates students to contribute meaningfully, recognizing that individual success is tied to group outcomes (Johnson & Johnson, 2008; Scager et al., 2016). This, in turn, supports promotive interaction, where peers encourage and assist one another (Cecchini et al., 2021). Collaborative learning also requires individual accountability to ensure each member is responsible for both learning and contributing (Brush, 1998; Herrera-Pavo, 2021). Then, interpersonal and group skills, such as communication and conflict resolution, are equally important in collaborative learning settings to enable favorable team dynamics (Vance & Smith, 2019). Finally, group processing further strengthens collaboration by prompting reflection on group performance and strategies for improvement (Kreijns et al., 2003). Together, these conditions create a structured yet adaptable framework that promotes meaningful, goal-oriented learning and deeper engagement.

Community of Inquiry Framework

This study is grounded in the Community of Inquiry (CoI) framework, with a particular emphasis on social presence. Garrison et al. (2000) developed the CoI framework, which provides a theoretical foundation for designing and understanding online learning environments. It comprises three interdependent elements: social, cognitive, and teaching presences, which together create the conditions necessary for meaningful and sustained learning (Caskurlu et al., 2021).

Social presence is central to this study, as it enables students to connect personally with their peers and is considered as an essential condition for successful collaboration (Akyol & Garrison, 2010; Garrison, 2006; Lowenthal et al., 2017). Social presence is demonstrated by teachers and students through emotional expression, open communication, and group cohesion, all of which may help a sense of belonging and trust form within an online learning community. When studying social presence, researchers use these three social presence constructs (i.e., emotional expression, open communication, and group cohesion) as predefined coding categories or indicators of social presence. These indictors of social presence are foundational for collaborative engagement (Garrison, 2015; Lowenthal, 2009; Swan et al., 2017).

The other two elements of the CoI further support the collaborative process. Cognitive presence refers to the extent to which learners can construct and confirm meaning through sustained reflection and discourse (Richardson et al., 2012). High level of instructor engagement should be present to promote deep learning and reflection, such as providing various learning opportunities for testing students' knowledge and providing them with feedback (Fiock, 2020). Then, teaching presence involves the design, facilitation, and direction of both cognitive and social processes to support meaningful learning (Garrison et al., 2000). Under this dimension, instructors can support both social and cognitive presences by establishing social climate for group communication that cultivate co-construction of knowledge and learning experiences (Fiock, 2020). Together, these elements establish a robust framework for analyzing online learning communities that promote connection, collaboration, and shared academic goals.

Established in the early 2000s, the CoI framework has seen continuous growth and refinement over the years, including proposals to incorporate additional conceptual elements such as learning presence (e.g., ElSayad, 2023; Shea et al., 2012, Shea et al., 2022; Wertz, 2022). Several studies have shown that learning presence (LP), which represents self-regulation, strongly correlates with the other three CoI elements (El Sayad, 2023; Honig & Salmon, 2022; Shea et al., 2012). Shea and his colleagues (2012) proposed a revised CoI model that integrates learning presence. Through quantitative content analysis of online student discourse, their study identified instances of "learning presence," characterized by forethought/planning, monitoring, and strategy use, particularly in collaborative activities. Their research found that learning presence strongly correlates with course grades. It also suggested learning presence's importance in online learning success. This study was supported by Wertz (2022) conducted a four-factor model by adding Learning Presence, which represents student self-regulation, to the existing CoI framework elements. Through confirmatory factor analyses (CFA) of survey data from 256 graduate students, the key highlighted that Learning Presence is the strongest predictor of Cognitive Presence, which emphasized the crucial role of learner self-regulation in online learning. ElSayad (2023) also performed CFA to examine the statistical structure of the extended CoI and the structural path

between the four presences. It revealed that learning presence significantly influences students' social and cognitive presences.

These developments demonstrate the dynamic interconnections among the four elements within the extended CoI framework. Understanding these relationships can help enhance our insight into how CoI components influence collaborative learning environments for adult learners and help develop strategies aimed at more effectively promoting social presence. As the CoI framework continues to evolve, our study offers a comprehensive analysis of specific design components that support adult learners. Our findings seek to contribute insights into how these elements impact the development of the extended CoI, with an emphasis on strengthening social presence.

Collaborative Learning Design Elements

Collaborative learning involves the co-construction of knowledge through interaction, dialogue, and problem-solving (Davidson & Major, 2014; Dillenbourg, 1999; Qureshi et al., 2021). Simply placing students in groups is not enough; meaningful collaboration requires intentional design and facilitation (Kreijns et al., 2003).

Social presence in online collaborative learning is strengthened through intentional instructional design. This begins with structured, manageable tasks that gradually evolve into more complex, interdependent challenges, encouraging shared responsibility, co-regulation, and collaborative problem-solving (Dillenbourg, 1999; Kirschner et al., 2004; Saariaho et al., 2016). Formative scaffolds, such as checklists, rubrics, and structured feedback, help guide group processes and keep students aligned with shared goals (Allal, 2020; Hadwin et al., 2017; Hadwin & Oshige, 2011). Peer-supported strategies, including peer tutoring, further promote co-regulation by enabling students to support one another and navigate challenges (Miller & Hadwin, 2015; Hadwin et al., 2017).

Equally important is the integration of technology that supports communication, resource sharing, and collaborative discussion (Jeong & Hmelo-Silver, 2016). A robust digital infrastructure allows instructors to monitor progress and provide timely feedback (Allal, 2020). In sum, enhancing social presence in online learning requires a blend of pedagogical strategy and technological support. By aligning the CoI framework with collaborative learning principles, instructors can foster meaningful interaction, support group regulation, and facilitate progressive knowledge-building.

Non-Traditional Graduate Students' Experiences of Social Presence in Online Collaboration

For the purposes of this study, we adopt the definition of non-traditional graduate students proposed by Strutkel et al. (2023) and Tesone et al. (2003), which characterizes these students as adult learners enrolled either full- or part-time, who may have taken gap years between degrees or come from diverse backgrounds. Most importantly, our study concentrates on students who manage their online graduate education alongside personal and professional commitments.

Online education offers a flexible and convenient learning modality that supports non-traditional graduate students by fostering social presence and helping them more connected to instructors and peers (Ajamy, 2023; Akyol & Garrison, 2009; Picciano, 2002; Van Doom et

al., 2014). Given the unique characteristics of non-traditional graduate students, it is beneficial for online course educators to be attentive to their specific physical and psychological learning needs (Diep, 2019). This consideration is especially relevant since non-traditional graduate students often have diverse backgrounds, may have taken gap years, and might require additional time and support (Chuang, 2021). Thus, by thoughtfully considering the unique needs and characteristics of the non-traditional students, collaborative online activities can foster social presence and contribute their positive learning experience (Chuang, 2021; Laal & Laal, 2012).

Many scholars have explored how collaborative online activities can strengthen social presence among adult learners (Diep et al., 2019; Jung et al., 2023; Nungu et al., 2023). For instance, Diep et al. (2019) found that adult learners who actively facilitated group work and engaged in online interactions reported a stronger sense of social connectedness. Similarly, Jung et al. (2023) noted that non-traditional students appreciated online collaboration for helping them gain skills in managing projects, feel more connected to peers, and benefit from flexible participation. Nungu et al. (2023), using a mixed-methods approach, showed that small group discussions in online settings can foster knowledge co-construction and higher-order thinking in STEM fields. These findings suggest that giving learners opportunities to lead discussions can strengthen connections and build a sense of community.

Although collaborative learning environments for non-traditional graduate students are gaining recognition (Connell, 2025; Jiang & Koo, 2020; Rosales-Asensio et al., 2021), concerns remain about social presence in these settings (Nungu et al., 2023; Parrish et al., 2021; Zhu & Zhang, 2023). For example, Nungu et al. (2023) found that small group discussions among postgraduate STEM students fostered knowledge co-construction and higher-order thinking, but inactive participation reduced interaction and collaboration. Similarly, Parrish et al. (2021) found that while some secondary teacher graduate students valued teamwork, many struggled to balance meetings with full-time jobs and wanted more direct instruction to clarify concepts. Zhu and Zhang (2023) showed that group contracts and peer evaluations supported teamwork in an online course but challenges with group formation and collaborative tools remained. Together, these studies highlight that inactive participation, group dynamics, and technology issues can hinder collaboration for non-traditional graduate students, pointing to the need for thoughtful design and support to strengthen the conditions for which social presence might emerge.

Purpose of the Study and Research Question

This study integrates key design elements (i.e., task structure, group formation, instructor facilitation, and technology integration) that foster social presence in a group project within a fully online course. Building on this foundation, the study has two primary aims: (1) to explore how non-traditional graduate students perceive social presence during a collaborative activity in a fully online course, and (2) to identify the design elements of the collaborative activity that contribute to their sense of social presence. This study is guided by the following research questions:

- How do graduate students perceive their social presence with their peers during an online collaborative activity?

- What design elements of the online collaborative learning activity contribute to students' sense of social presence?

Methods

Instrumental Case Study

This study employed an instrumental case study design to explore how integrated design elements might foster social presence in a fully online collaborative learning environment for non-traditional graduate students. Rather than merely examining students' perceptions, the study aimed to generate deeper insights that could inform both theory and practice. Instrumental case studies are used to understand a specific case and to refine broader theoretical frameworks (Baxter & Jack, 2008; Johnson & Christensen, 2017; Stake, 1995).

In the study's context, four key design elements were intentionally embedded in the instruction to support social presence in the online group activity. By focusing on a distinct group of learners engaged in online collaborative activities, the study seeks to illustrate how thoughtful design can enhance the conditions for social presence to emerge, which aligns well with the goals of an instrumental case study.

Positionality

As researchers with backgrounds in instructional design, we bring both personal and professional perspectives to this study of online collaborative learning activities. Our interest in this topic stems from our experiences as educators and learners navigating the complexities of collaboration and the development of social presence in online environments, particularly for adult learners.

We acknowledge that our experiences in online teaching and learning may influence how we interpret participants' data. To address this, we maintained analytical memos to critically reflect on our coding decisions throughout the research process. Additionally, as researchers embedded in the same academic environment as some of the study participants, we took deliberate steps to uphold objectivity and ensure confidentiality. This means we remained aware of how our own experiences could influence the analysis, which allowed us to approach the data with greater care and neutrality. To support this, we engaged in reflective discussions throughout the process to critically examine our perspectives and maintain analytical rigor.

Settings and Participants

This study was conducted at a four-year public university located in the southwestern United States that offers a fully online graduate program in Instructional Technology. The course had an initial enrollment of 16 students in spring 2024. The inclusion criteria for selecting participants were as follows: (a) students enrolled in EDUC 5007, a fully instructional design online program for graduate students, (b) who are at least 25 years of age, and (c) employed full-time or part-time. On the other hand, the exclusion criteria for the study were students who were not employed or were under the age of 25. All participants were confirmed to be non-traditional graduate students based on a learner profile they completed at the beginning of the semester. The learner profile also inquired students about their strengths and areas for improvement as future instructional designers. Moreover, all students were employed either part-time or full-time while taking the course. The instructor grouped the class into four teams of three members and two teams of two members.

However, one student from a pair withdrew from the course midway through the semester, resulting in a total of 15 participants across five teams.

Instructional Context

The study was embedded in an online instructional technology course designed to help students gain a foundational understanding of instructional design, where they engaged in collaborative projects to apply what they learned. The course EDUC 5007 (a pseudonym) includes an eight-week group project in which students collaborate to design instruction that teaches a specific task. The project offers students an opportunity to cultivate social presence—that is, to present themselves authentically and engage meaningfully with peers. The class was divided into smaller groups that provided an ideal context for observing social presence in online collaborative activity (Akcaoglu & Lee, 2016; Rovai, 2002). Thus, in this study, four teams had three members, and there were two pairs.

Designing for Social Presence in Online Collaboration

Four key design elements were embedded into the collaborative activity with the aim of fostering conditions that support the emergence of social presence. First, the course content was sequenced from simple to complex. During the first six weeks, students built foundational knowledge of instructional design through individual assessments that trained them to analyze learner needs and contextual factors. These tasks also helped students align learning experiences with their target audience. From weeks seven to fifteen, students transitioned into a collaborative group project, applying their knowledge in a structured, real-world context to deepen learning through practice.

The second and third elements focused on strategic group formation and instructor's active facilitation of collaboration. Students were grouped into pairs and triads based on the strengths of their performance, which the instructor had assessed through individual activities completed during the first seven weeks of the semester. Then, each group had a temporary leader appointed to guide initial coordination, but they had the flexibility to select a new leader by mutual agreement. Upon receiving their team assignments, students were encouraged to meet regularly to plan, delegate, and support one another. As challenges emerged, particularly for students with limited design experience, as indicated in their learner profile, the instructor provided ongoing feedback and formative assessments, such as draft reviews, to guide progress and reinforce learning. The fourth element was the integration of a team goal tracker, which allowed students to log tasks, monitor progress, upload shared documents, and link relevant resources. This technology tool enhanced coordination and supported the development of accountability and shared responsibility.

Facilitation of the Online Collaborative Activity

To help encourage the conditions for social presence to emerge in this online collaborative learning activity, the course instructor disseminated weekly reminders via the learning management system or through general email announcements. These communications outlined the expectations for students as active and responsible group members. Additionally, the emails included supportive messages encouraging students to seek clarification and assistance when course content was unclear. The instructor also used the email system to share relevant academic resources, including references pertinent to the

group project, and to provide detailed guidance on project submission procedures, particularly regarding the use of assessment rubrics.

Case Selection

We used purposive sampling following the principles established by Miles and Huberman (1994) to select a fully online course that incorporated the CoI framework, as this provided a context for exploring social presence in collaborative learning. The case was bounded by a group of non-traditional graduate students enrolled in the course. This instrumental case study was not undertaken to evaluate the course itself, but to use the course as a context through which to investigate broader questions about how social presence is fostered in online collaborative learning.

Data Sources and Collection Methods

We adopted a qualitative approach to explore graduate students' perceptions of their social presence during a collaborative activity. Data were collected from multiple sources, including peer feedback, reflection papers, observation notes from the presentation day, open-ended survey responses, instructor's weekly email announcement, and a transcript of the instructor's interview. All participant names were anonymized using pseudonyms to ensure confidentiality

In the peer feedback process, students evaluated each group member and provided overall comments on team dynamics. In their reflection papers, students discussed their experiences, including successes, challenges, and lessons learned from the collaborative activity. On presentation day, one of the researchers took on the role of a full observer during the presentations to capture the quality of interaction and how the instructor facilitated the group presentations. The instructor also sent weekly announcements to provide students with general feedback about their activities and to share her real-world experiences in instructional design. To gain further insights into the facilitation of online collaboration, the same researcher conducted a semi-structured interview with the course instructor, following a protocol developed based on the CoI framework.

Data Analysis

We employed two qualitative analysis methods in this study: thematic analysis and summative content analysis.

Thematic Analysis

We conducted a theoretical thematic analysis using Braun and Clarke's (2006) six-phase process to address the first research question, "How do graduate students perceive their social presence with their peers during the online collaborative activity?" We used thematic analysis because it allowed us to identify repeated meanings across datasets and to analyze and report patterns that were relevant to our research question (Braun & Clarke, 2006; Castleberry & Nolen, 2018; Xu & Zammit, 2020).

First, we began by transcribing and organizing the data, reading through it to gain familiarity, and noting initial ideas and patterns. Second, we developed a provisional "start list" of codes based on our conceptual framework (Miles et al., 2014), defining each code with references to existing literature and examples from the data. These codes were grouped

into categories, where terms with the same ideas were clustered into a codebook (see Appendix). We also refined our codes to ensure alignment with both the framework and the dataset.

An instructional strategy expert, who was external to the research team, reviewed the codebook and provided feedback on identifying meaningful units of analysis. To ensure interrater reliability, two additional researchers independently coded a sample dataset, and discrepancies were resolved through discussion (Campbell et al., 2013). This process helped refine the final codes and their definitions.

In the third and fourth steps, we used Dedoose, a qualitative research software, to systematically segment our data into meaningful units and applied descriptive codes to these segments. Throughout the analysis process, we documented our decision-making and rationale through analytical memos. When new concepts arose that did not align with existing codes, we developed emergent codes to accurately represent them (Elliot, 2018; Stuckey, 2015). In the fifth phase, we defined and refined each identified theme, ensuring that each one accurately represented the data that contributed to its formation. Finally, in the sixth phase, we compiled the report, presenting a coherent, and logical narrative that effectively conveys the story told by the data. This report also includes excerpts from my online graduate student participants about their experience in collaborative learning.

Summative Content Analysis

In addition to thematic analysis, we applied a summative content analysis (Hsieh & Shannon, 2005), counting the frequency of terms related to design elements. While frequency alone does not determine importance, it provided a useful descriptive indication of salience, which we then interpreted in relation to context and meaning.

To address our second research question—"What design elements of the online collaborative learning activity contribute to students' social presence?"—systematically identified and counted specific words and phrases to uncover patterns in their usage and underlying meanings (Hsieh & Shannon, 2005). For instance, the term "leader" appeared 14 times across students' reflection papers and peer review activities. A closer examination of these excerpts revealed that leadership was a recurring pattern that contributed to social presence by facilitating team coordination and goal alignment. In this process, we used Dedoose software to track term frequency and link occurrences to their respective data sources, which streamlined our analysis and enhanced traceability.

Results

Using Braun and Clarke's (2006) thematic analysis, we identified four themes that capture how students experienced social presence in collaborative online learning. Two themes highlight the role of peers: self-regulation and leadership as drivers of social presence, and task demands and management issues as barriers. The other two emphasize the instructor's role: providing constructive feedback and modeling best practices to reduce task complexity. Within these themes, sub-themes emerged around individual versus group regulation, and the instructor's dual role as facilitator and guide. Together, these themes illustrate both the affordances and challenges shaping graduate students' perceptions of social presence in an online course.

Theme 1: Self-Regulation and Leadership as Catalysts of Social Presence

Graduate students participating in the online group activity reported a positive perception of social presence, which they attributed to their peers' self-regulation abilities, and their leaders' guidance.

Self-Regulation

Each team initiated their project by breaking down their tasks into smaller, manageable tasks, assigning individual responsibilities, and establishing clear deadlines. Majority of the team members exhibited self-regulation skills by independently managing their tasks to meet deadlines and assisting in the quality assurance of their work. Furthermore, the assigned team leaders demonstrated proactive leadership by coordinating tasks, ensuring project expectations and deadlines were met, and supporting their peers despite their own personal and professional commitments. These factors fostered positive interdependence and individual accountability that contributed to the students' social presence.

Self-regulation was evident in the teams' structured approach, with nine students setting individual goals and managing their time and resources (Shea et al., 2012; Zimmerman, 1989). This structure demonstrated how team members willingly leveraged their strengths and expertise to complete individual academic tasks, directly contributing to overall team goals. For example, the peer review of Sara (all names are pseudonyms), one of the team leaders, expressed how one of her teammates, Diane, showed attentiveness and collaboration within the group. Sara described Dianne's contribution:

> She paid attention to small details that I may have missed on my portion of the project and did so with a respectful manner. She was also very knowledgeable on ways to improve the overall document and felt she was an asset to my group.

Sara's peer review highlighted Diane's attentiveness to details and expertise in designing documents, which contributed the group's success. Thus, the success of each team can be credited to the strong self-regulation demonstrated by its members. The structured approach to task division has reinforced their self-regulation skills, enabling them to take responsibility, focus on their strengths, and pay close attention to details, which ultimately enhances the overall quality of their work. Consequently, these skills have contributed to the development of a cohesive environment where team members respect one another and collaborate toward shared objectives.

Leadership

Team leadership also emerged as another factor that shaped the team dynamics and led to purposeful interactions (Mehall, 2020). The course instructor Dr. Williams's intentional team formation was based on strengthening collaboration and ensuring interactivity that laid the groundwork for positive leadership. Her strategy of assigning initial leaders, with the option for teams to adjust, empowered capable individuals who demonstrated initiative, quality work, and punctuality.

The group leaders, Elsa, Charlie, Loraine, Sam, and Tristan, demonstrated exceptional self-regulation and proactive leadership, directly cultivating a supportive environment for their teams. Seven team members consistently lauded their leaders' initiative, organizational

skills, and ability to coordinate tasks. They ensured that project expectations were not just met but exceeded. Leaders were praised for their guidance, communication, and skills in balancing coursework with personal and professional responsibilities. Elsa, Group 3's team leader, reflected on her leadership that "My leadership qualities were an asset on the project. I communicated well, encouraged accountability, and led by example by completing tasks early and with consideration for my teammates' time." This commitment to leading by example was among team leaders. One of the Group 5 members, Samira, described how their leader took care of the team, "Our team lead did an exceptional job, taking the lead with formatting the project before submission and initiating emails to our professor for further clarifications." Loraine, Group 4's leader, emphasized the power of decisive action, explaining, "Given the different schedules, it was sometimes necessary to make executive decisions about meeting times, formatting, or communication." Sara, Group 5's leader, described her deliberate approach: "I always made sure to check in with them and that the project was divided out equally. I also wanted to make sure that any Zoom calls that happened were prepared in advance to give everyone time to plan." Charlie, Group 1's leader, further detailed his leadership: "I was the group leader for my group... I communicated with my group frequently over email... checked in on how others were progressing... and lead Zoom meetings."

At the same time, certain students who were not designated as leaders have used their expertise to support their peers learning, irrespective of formal roles. For instance, in Group 2, instructional designer Candice proactively contributed her time and knowledge, noting:

> As the only practicing instructional designer in our group, I have more experience in project management, so I contributed by initiating meetings, setting up shared documents, assigning responsibilities and defining deadlines for each stage of the project. With more experience in visual design, I also created 80% of the visual presentation...

Similarly, in Group 6, mutual quality checks fostered strong support. Charleston stated, "In our document we have endeavored to be resourceful, collectively critique each of our input and refine the justified inclusion." This interaction led Tristan, Group 6 team lead, to appreciate their team's positive dynamics, stating, "I feel lucky to be part of a team where each other's opinion is valued. Had one of us wanted to control the situation, we would not have created that great of a document." In these instances, supporting each other enhanced the team's ability to achieve shared objectives. Eventually, these positive team dynamics among team members had cultivated an environment where open communication, empathy, and mutual understanding became bedrock of the collaboration.

Theme 2: Task Demands and Management Issues Are Barriers to Social Presence

While positive social presence emerged from self-regulation and leadership within teams, negative experiences often stemmed from task complexity of the course project and management issues related to time and uneven workload distribution. These challenges led some team members to diminished social presence and feel frustration.

Task Complexity

Six students reported that they found complex nature of the group project, which required online graduate students to design a learning experience within their specific

contexts, challenging. Some of these challenges arise from difficulties in applying foundational instructional design concept. For instance, Tristan, noted, "There are so many things to think about when designing a lesson... as we progressed through the analysis, this drastically changed.

His peer, Charleston, added that their initial enthusiasm waned upon receiving feedback that their topic "lacked the depth necessary for an hour-long learning procedure," necessitating further instructor guidance. Similarly, Dianne, from Group 5, found writing learning objectives "took more effort than [we] they thought." This sentiment was echoed by her leader, Sara, who struggled with aligning activities and assessments. These experiences highlight that instructional design, regardless of prior teaching background or initial ideas, is challenging due to the need for cohesive alignment across all components and structured and sustained instructional support.

Time Management and Uneven Workload

We also found that time management was a major challenge for non-traditional graduate students, especially those balancing personal, professional, and academic responsibilities across different time zones (Fung, 2004; Kara et al., 2019; Oyarzun & Martin, 2023). Seven out of fifteen students reported this issue. Angel, for instance, noted that the time difference between her and her teammates' respective locations limited her participation, preventing her from attending project presentations despite engaging in Zoom meetings and email correspondence. Brianna faced similar time zone inconveniences. Loraine, Group 2's leader, acknowledged the difficulties of coordinating schedules among professional peers. Despite agreeing that most coursework would be completed on weekends, and setting deadlines after work hours, Loraine stated, "The most difficult aspect was scheduling and leveling out our expectations... it was difficult to work at the same pace, but we managed." Her colleague, Camille, reinforced this, citing a demanding semester with state testing that highlighted the need for improved time management to support peers. These accounts underscore how professional commitments significantly limit online graduate students' availability for collaboration, impacting both their contributions and their ability to support teammates.

Uneven workload distribution was a prominent theme in student reflections and peer feedback. It was primarily driven by poor communication and lack of accountability. Charlie, Team 1's leader, experienced significant stress when a teammate failed to complete their portion due to a last-minute "emergency," forcing Charlie and another member to finish the evaluation. Despite initial task agreements, the lack of timely communication also led to frustration. Charlie learned the importance of "communicating clear deadlines to prevent any last-minute stress." Even with instructor mediation efforts, the issue in Team 1 persisted, as Dr. Williams noted the member "dropped the ball." Similarly, Candice from Team 2 reported that one member "stalled the progress by not contributing sufficient input... as well as always being the last person to finish their designated responsibility," which "hampered the progress and affected the project's cohesion." Furthermore, one student's leader dropped the course mid-semester, leaving the remaining student to independently gather feedback and assume additional responsibilities. This incident, confirmed by Dr. Williams, highlighted the challenge of monitoring every member despite trusting their ownership and professionalism.

Theme 3: Instructor Scaffolding and Constructive Feedback Influences Perceptions of Social Presence

The analysis of the students' reflection paper, observation notes, and interview transcripts revealed that the instructor's constructive feedback helped students manage their challenges they had in the group project. To assist the students in areas for academic growth due to task complexity, the instructor shared her experience of how she provided instructional scaffolding to the formative assessments. In my interview with Dr. Williams, the instructor, she explained how she applied various strategies to support students in learning instructional design. A key approach was providing both individualized feedback on task analyses and general comments for most teams. She primarily offered written, rubric-oriented feedback on assignments, consistently reminding students to refer to the rubrics while preparing their work. Additionally, she emphasized the importance of writing quality, encouraging students to follow APA guidelines correctly. Through constructive feedback and structured guidance, Dr. Williams helped students navigate the complexities of instructional design.

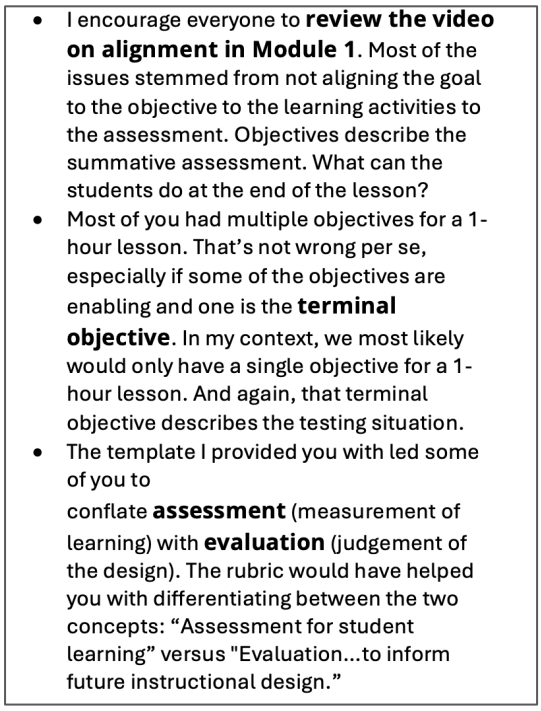
Additionally, we used an open-ended survey question to ask students about their perception of their course instructor during the group project. One of the students described how the instructor supported their group. She mentioned, "Our interaction with our course instructor during the group project was helpful. Her suggestions were foundation and the bricks for our project." Another student also commented, "The instructor provided valuable feedback, though the instruction details can be more organized." Four out of six survey respondents described the instructor's presence as "professional and accessible," clear in directions, willing to offer virtual meetings if needed to discuss the project, and "helpful and engaging." These statements illustrated how the instructor reinforced her role in fostering student engagement and helping her students understand the course content.

Theme 4: Instructor Modeling Best Practices Provides Clarity and Reduces Complexity

Beyond feedback, Dr. Williams actively reinforced key instructional design concepts by modeling best practices and providing examples to clarify alignment. She noticed that students often confused assessment with evaluation, so she frequently sent announcements featuring real-life cases from her experience as both an instructor and an instructional designer. Furthermore, the course incorporated instructional videos in the early weeks of the semester. When students struggled with aligning learning elements, Dr. Williams encouraged them to revisit these videos for additional support (see Figure 1). Therefore, through a combination of individualized feedback, real-world examples, and instructional resources, Dr. Williams productively guided her students in mastering instructional design.

Figure 1

Screenshot of a Weekly Announcement



The students' reflection papers revealed how the instructor's guidance shaped her learning experiences. For instance, Emma described both her challenges and the lessons she gained from the course instructor:

> The professor's criticism on the first topic was essential, and we learnt to adjust quickly. However, time management may have been improved. We wasted precious time because of the first topic change. One area for improvement is task analysis. We'd prefer to go farther into breaking down difficult activities into easy chunks for young students. We also learnt there is always space for improvement in presentations. Better cooperation throughout the planning phase would have led to a better presentation. Apart from those weaknesses what I learn is procedure learning and this project gave more value on clear communication and collaboration.

Emma's reflection illustrated how the instructor's guidance helped her team adapt, reflect critically on their work, and recognize key skills, such as communication, collaboration, and instructional design strategies, which can improve their abilities as future instructional designers.

Table 1

Analytical Framework for Synthesized Thematic Analysis Addressing Research Questions

Research Question	Theme	Sub-Themes/Illustrative Factors
RQ1: How do graduate students perceive their social presence with peers during an online collaborative activity?	Self-Regulation and Leadership as Catalysts	Individual self-regulation (goal setting, time/task management) Group-level leadership (coordination, accountability, support)
	Barriers to Social Presence	Task complexity (difficulty applying instructional design concepts)
		Time and workload management issues (uneven contributions, scheduling conflicts)
RQ2: What design elements of the online collaborative learning activity contribute to students' social presence?	Instructor Facilitation	Constructive feedback and scaffolding (rubric-based, formative guidance) Modeling best practices (real-world examples, instructional videos, clarifying announcements)

Discussion

This study revealed that non-traditional graduate students' perceptions of social presence in online collaborative learning varied. Team members or peers' self-regulation strategies and the guidance of their team leaders contributed to positive perceptions of social presence. This is most likely because students who engage in self-regulation proactively acquire academic skills by setting goals, selecting and deploying learning strategies, and monitoring their progress (Zimmerman, 2008). Furthermore, these proactive learner qualities require social forms of learning, such as seeking help from instructors and peers (Zimmerman, 2008). Consequently, this opened an opportunity for team members to communicate openly, wherein they acknowledged each other's contributions and provided and received encouragement (Garrison et al., 2000). These interactions potentially lead to better group cohesion, positive interdependence, and individual accountability, all of which are important factors for establishing collaborative learning (Laal et al., 2013; Sasson et al., 2022; Xie et al., 2017).

Moreover, the proactive guidance of team leaders provided better direction to team members, which reflects the CoI's teaching presence, while simultaneously engaging with students' learning presence (Anderson et al., 2001; Garrison et al., 2000; Honig & Salmon, 2021; Luo et al., 2022; Shea et al., 2012). In a Community of Inquiry, instructors share the role of facilitating discussions with students, who, in turn, contribute ideas and guide their peers throughout the learning process (Garrison et al., 2000). In this study, teaching presence became manifested as team leaders and other students who assumed leadership roles, based on their expertise, had fostered a supportive collaborative learning environment. These individuals demonstrated a greater use of their self-regulation skills (Shea et al., 2012; Xie et

al., 2017) and metacognitive abilities (Järvelä et al., 2021), which enabled them to complete tasks, meet deadlines, and support peers, particularly those with less experience in instructional design. Therefore, the leaders functioned as facilitators, helping their peers reach higher levels of cognitive presence (Honig & Salmon, 2021).

The actions of student leaders in facilitating group work also exemplified *learning presence,* defined as a student's ability to actively manage their cognitive, emotional, and motivational resources to sustain learning (Shea et al., 2022). This was evident from the beginning of the project, as each team collectively established goals, coordinated tasks, and delegated responsibilities to specific members. They also demonstrated this by adapting their learning strategies in response to feedback from their instructor. For instance, some students even led the final quality check of their projects by using course rubrics. These examples of self-regulation, the management of one's own learning processes and behaviors, were then translated into a more collaborative practice known as co-regulation. This co-regulation involved leaders sharing their regulatory skills with their peers, helping the entire group stay on track and achieve its goals. According to Hadwin and Oshige (2011), co-regulation occurs when a "capable other" supports novice learners. Both self-regulation and co-regulation stemmed from the student leaders' metacognitive awareness (Järvelä et al., 2021). These leaders adapted their cognitive strategies, motivation, and behaviors at both individual and group levels, which is indicative of metacognition. In other words, their understanding of the tasks and the strategies needed to accomplish them reflects metacognitive competence. For instance, some students used rubrics to evaluate their peers' work and ensure overall project alignment, which was an example of metacognitive strategy in action. Overall, this study highlights how teaching presence and learning presence among student leaders in collaborative learning contexts are closely tied to team management and the collective sharing of contributions and professional expertise to achieve a common goal. This study showed that students' teaching and learning presences were instrumental to support the development of adult learners' social presence in collaborative online activities.

On the other hand, challenges such as task complexity and time management led to non-traditional students' negative perceptions of social presence. Although task complexity is necessary to encourage the co-construction of knowledge (Saariaho et al., 2016) in online group projects, it can overwhelm students who lack foundational knowledge, which could potentially impede both their performance and engagement (Chang & Kang, 2016; Chen et al., 2023; Donelan & Kear, 2023). Nonetheless, this study found that teaching presence, particularly through the instructor's constructive feedback and modeling best practices, can enhance students' understanding of complex course concepts. These instructional interventions help create a supportive learning environment that scaffolds students' cognitive processes and deepens their understanding of the lessons. The instructor's feedback and modelling served as scaffolding strategies that temporarily reduced students' cognitive load, allowing them to practice and apply the targeted skills during the group project (Ambrose et al., 2010; Brindley et al., 2009; Zuo et al., 2023). One possible explanation was that the instructor identified specific learning needs (Knowles, 1977) within each group, and used scaffolding, through feedback and modeling, to help students better understand how to implement particular skills. Since many of the participants were still developing instructional design competencies, these scaffolds are beneficial in teaching specific skills.

In their recent meta-analysis, Zuo et al. (2023) found that scaffolding positively impacts online learning, across all disciplines studied, including chemistry, mathematics, and educational technology. Notably, they discovered that scaffolding has more substantial impact

on collaborative online learning. One explanation was that scaffolding helps team set goals and supports behaviors and learning performance in collaborative activities (Ambrose et al., 2010; Zuo et al., 2023). Furthermore, the instructor's feedback aimed at improving students' conceptual understanding of the instructional design knowledge, referred to as conceptual scaffolding, was found to have a large effect size compare with other types of scaffolding (i.e., meta-cognitive and procedural scaffolding) (Zuo et al., 2023). This is likely due to some non-traditional graduate students needing to connect prior knowledge with new concepts to construct meaningful understanding and apply it in collaborative activities (Diep et al., 2019). This study emphasizes the importance of recognizing that some non-traditional graduate students begin online coursework without a solid foundation in the subject area, thus, how the instructor provide feedback, and guidance can play a crucial role adapt and achieve the desired learning outcomes, especially in collaborative online activities.

Contribution to the Community of Inquiry Framework

This study contributes to the development of the extended CoI framework by exploring how the unique skills, expertise, and self-regulation abilities of non-traditional graduate students can influence the proposed component of "learning presence." Our findings reiterate the importance of self-regulation at both individual and collective levels in adult online learning (Järvela et al., 2018; Shea et al., 2022), a concept particularly relevant to Hadwin and Oshige's (2011) theory on the social aspects of self-regulated learning.

Self-regulation involves a student's ability to manage their metacognitive skills, behaviors, and motivation to achieve their learning goals (DiDonato, 2013; Hadwin & Oshige, 2011; Järvela et al., 2018). Our study reaffirms that non-traditional graduate students often bring a wealth of professional expertise and organizational and communication skills (Diep et al., 2019; Kapur, 2015). In a collaborative setting, these skills help their teams achieve desired learning outcomes (Hadwin & Oshige, 2011; Järvelä et al., 2021). Our findings suggest that the unique abilities of non-traditional students (e.g., time management, motivation, knowledge and skills) are necessary prerequisites for building conditions under which social presence can flourish. Collaborative learning is fundamentally about the co-construction of knowledge, and these students' professional experiences and skills help them, and their peers, better understand and solve complex problems in group projects.

Finally, our study suggests that the proactive leadership abilities of students who take the initiative on complex group projects are a clear manifestation of learning presence. Without this initiative and unique character, collaboration would likely not succeed. We suggest that these proactive learner qualities are a social form of learning, often requiring students to actively seek help from both instructors and peers (Zimmerman, 2008).

Implications for Practice and Theory

This study offers practical implications for instructional designers and course instructors seeking to create effective online collaborative learning environments for non-traditional graduate students. An initial key consideration is the strategic grouping of students and the establishment of leadership roles. Our process of assigning students to groups based on their diverse skills and strengths can be beneficial, aligning with previous research (Kwiatkowska & Wiśniewska-Nogaj, 2022; Majid, 2010; Read et al., 2022; Van Heuvelen et al., 2020). Furthermore, we believe that designating a temporary team leader can influence the development of social presence as they can initiate communication among team members,

aligning with previous research (Fittipaldi, 2020; Gressick & Derry, 2008). By initiating communication and organizing tasks, these team leads help to establish a structured and proactive collaborative environment, which in turn can help foster a sense of accountability and positive interdependence.

Additionally, the development of self-regulation skills, a core component of learning presence, is often a challenge for non-traditional learners balancing multiple commitments (Oyarzun & Martin, 2023). Our findings suggest that instructors should provide instructional scaffolding to help in this process, aligning with previous research (Brindley et al., 2009; Zuo et al., 2023). For instance, providing weekly reminders and offering general feedback on group progress can guide students to identify areas for improvement and develop a more proactive approach to their collaborative work. This practice not only improves the quality of group projects but also strengthens students' metacognitive awareness and self-regulatory habits (Garrison, 2022).

Limitations of the Study

This instrumental case study has limitations. While the use of multiple data sources, such as reflection papers, team member evaluations, and instructor interviews, provided a valuable opportunity for in-depth exploration of non-traditional graduate students' perceptions of social presence during collaborative activities, the findings are primarily applicable to a small, specific sample and context. Consequently, they should be interpreted with caution and are not broadly generalizable. Qualitative research is not intended to establish direct cause and effect relationships. We also employed summative content analysis (Hsieh & Shannon, 2005) in our analysis of collaborative learning design elements. Counting frequencies provided an additional descriptive layer that highlighted which design elements were most salient to participants, before deeper qualitative interpretation. An additional methodological limitation was the absence of individual student interviews. Due to ethical considerations and logistical constraints, most of the qualitative data relied solely on self-reported reflection papers, team member evaluations, and a single instructor interview. This meant that direct, in-depth probing of individual student experiences, motivations, and specific instances of social presence was not feasible, potentially limiting the richness of certain insights.

Conclusion

Using instrumental case study, we explored how integrating design elements (i.e., task structure, group formation, instructor's facilitation, and technology integration) can foster social presence in a fully online collaborative activity for non-traditional graduate students. Our findings revealed that peers' self-regulation abilities (e.g., goal setting, time/task management) and group-level leadership (e.g., coordination, accountability, support) had shaped non-traditional graduate students' positive perceptions of social presence in collaborative activities. However, task complexity (e.g., difficulty applying instructional design concepts) and time and workload management issues (e.g., uneven contributions, scheduling conflicts) were reported to be barriers to social presence. Instructor's facilitation through constructive feedback, scaffolding (e.g., rubric-based, formative guidance) and modeling best practices (e.g., real-world examples, instructional videos, clarifying announcements) was identified as a key contributor to enhancing social presence. This study offers practical instructional design strategies for educators and instructional designers aiming to create collaborative online learning environments that support social presence among non-traditional graduate students.

Declarations

Conflicts of Interest

The authors declare no conflicts of interest.

Ethics Approval

Ethical approval was gained from Texas Tech University's Institutional Review Board, with approval numbers IRB 2023-115 (April 11, 2024) and IRB 2024-372 (April 23, 2024).

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Appendix

Codebook for Social Presence in Collaborative Learning

Category	Code Name	Definition
Regulatory Behaviors Among Team Members	Taking individual accountability	All team members are held accountable for doing their share of the work and for mastery of all of the material to be learned (An et al., 2008; Wang, 2009)
	Demonstrating a willingness to contribute to the group	Team members demonstrate specific skills (e.g., leadership, speaking up) needed to actively contribute to the group's success (Kukulska-Hulme, 2005)
	Difficulty in addressing individual differences	A team member faces obstacles in managing conflicts that arise from the unique characteristics, perspectives, or differences among team members (Brindley et al., 2009; Oyarzun & Martin, 2023; Verstegen et al., 2018)
	Establishing positive interdependence	A team member provides support to their colleagues, ensuring that everyone's success is linked and depends one another (Brush, 1998; Wang, 2009)
	Leadership (emergent)	Presence of a leader who can play both functional and social / emotional leadership roles (An et al., 2008; Hotte & Pierre, 2002)
	Seeking help or information from others	Team members request or offer assistance or information related to learning materials, activities, tasks or goals (Ching & Hsu, 2013)
	Personal Experience	Sharing relevant personal information or experiences for support or social exchange (Ching & Hsu, 2013)
	Noting one's own or group's learning behavior	Statements about individual or group strengths/weaknesses in engaging with learning experiences, such as effective strategies, innovative approaches, and positive interactions with information and peers.
	Providing help or information to fellow team members	A team member provides assistance or information related to learning materials, activities, tasks, or goals. (Curtis & Lawson, 2001)

	Providing clarification	A team member provides clarification to assist his/her fellow member. (Shea et al., 2012)
	Noting one's own or group's learning behavior	Statements about individual or group strengths/weaknesses in engaging with learning experiences, such as effective strategies, innovative approaches, and positive interactions with information and peers.
	Appraising level of interest and engagement	Statements among team members regarding individual or collective engagement, interest, commitment, or participation. (Azevedo et al., 2004a; Azevedo et al., 2004b)
	Coordinating tasks in a group activity	Team members in a group activity distributes, and sequences tasks and sub-tasks to others/self for future completion. (Shea et al., 2012; Stein, 1982)
	Establishing interpersonal relationships	Team members develop a network of interpersonal relationships that are integrated within group structures comprising norms, values, rules, roles, beliefs, and ideals. (Kreijns et al., 2022)
	Evaluating the quality of a deliverable or an outcome	Team members judge the accuracy, comprehensiveness, relevance, or other aspects of an end product or its components. (Azevedo et al., 2004a; Azevedo et al., 2004b)
	Planning Approaches to Achieve Group Goals	Team members in a group activity consider approaches, procedures, or tasks to be used to attain goals (Zimmerman, 1989)
Instructor's Roles in Facilitating Collaboration	Communicating the curriculum	The course instructor communicates the important outcomes of the course to the class, including documentation of course goals, topics, rubrics, and instructor expectations. (Shea et al., 2010)
	Conducting supportive demonstrations	The instructor is committed to demonstrating how instructional technology operates effectively in practical, real-world contexts. (Shea et al., 2010)
	Facilitating a collaborative thinking process	The course instructor helps keep members engaged in a productive and collaborative thinking process (Shea et al., 2010); Yukawa, 2006)

	Offering useful illustrations	The course instructor attempts to make course content more comprehensible by providing substantive and concrete examples (Shea et al., 2010)
	Providing formative feedback on assignments	The course instructor explicitly evaluates assignments to offer feedback OR diagnoses misconceptions to help students learn. (Shea et al., 2010)
	Realigning team members' focus on instructional design topic(s)	The course instructor guides team members back to the core instructional design topics, ensuring they stay focused on the project's objectives. (Shea et al., 2010)
	Setting climate for learning	The course instructor encourages teams to delve deeper into course concepts, such as suggesting more manageable psychomotor topics for their project. (Shea et al., 2010)
	Scheduling coordination (emergent)	The course instructor organizes, plans, and manages the timing of events, activities, or meetings to ensure they align with everyone's availability and the overall goals.
Task Complexity	Failure to incorporate feedback (emergent)	The instructor observed that the group did not incorporate their peers' feedback to enhance their work.
	Importance of Rubric for Clarification (emergent)	This emphasizes the instructor's reliance on the rubric to clarify expectations when other methods of explanation did not work.
	Lack of Structured Guidelines in Course Activities	Individual student experiences ambiguity or frustration due to a need for a defined rubric and clear expectations in completing a task
	Need for Structured Peer Review (emergent)	The instructor identified areas for improvement in the peer review process, emphasizing the importance of structure and preparation to enhance its effectiveness.
Management Challenges	Dealing with uneven workload	A team member is experiencing frustration due to an uneven distribution of tasks, which has been attributed to communication challenges and delays in task completion (Capdeferro & Romero, 2012; Oyarzun & Martin, 2023; Strauß & Rummel, 2021).

	Lacking accountability	A team member feels burdened by the lack of accountability from other team members (An et al., 2008; Liu et al., 2010)
	Struggling with communication issues	A team member struggles in communication when he/she is not effectively understood by his/her fellow team members, leading to misunderstandings, conflicts, and inefficiencies (Oyarzun & Martin, 2023)