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Understanding Peer and Student-Instructor Relationships in Post-Secondary Online Learning

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Abstract: The development of meaningful interpersonal relationships remains a persistent challenge in post-secondary online learning. Although peer and student-instructor relationships are widely recognized as important to successful online learning experiences, existing research has largely emphasized observable forms of participation and interaction, offering less insight into how learners subjectively experience the influence of these relationships on learning processes. Grounded in sociocultural theory and the Community of Inquiry framework, this study examines how peer and student-instructor relationships shape online learning experiences in post-secondary education. An explanatory sequential mixed methods design combines survey and interview data from education students and instructors at a Western Canadian Faculty of Education. Early insights from data analysis suggest that participants perceive both peer and student-instructor relationships as important components of their online learning experiences, particularly in supporting engagement, participation, and challenge resolution. By foregrounding the social and subjective dimensions of online learning, the study contributes to discussions surrounding the pedagogical conditions



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that foster positive relationships and support student learning in post-secondary online education.

Keywords: online learning, interpersonal relationships, post-secondary education, meaning-making, sociocultural theory, Community of Inquiry.

Comprendre les Relations entre Pairs et entre Étudiants et Enseignants dans l'Apprentissage en Ligne Postsecondaire

Résumé°: Le développement de relations interpersonnelles significatives demeure un défi persistant dans l'apprentissage postsecondaire en ligne. Bien que les relations entre pairs ainsi qu'entre étudiants et enseignants soient largement reconnues comme importantes pour la réussite des expériences d'apprentissage en ligne, les recherches existantes ont principalement mis l'accent sur les formes observables de participation et d'interaction, offrant moins d'éclairage sur la manière dont les apprenants vivent subjectivement l'influence de ces relations sur les processus d'apprentissage. Ancrée dans la théorie socioculturelle et le cadre de la Community of Inquiry, cette étude examine la façon dont les relations entre pairs et entre étudiants et enseignants façonnent les expériences d'apprentissage en ligne dans l'enseignement postsecondaire. Un devis mixte séquentiel explicatif combine des données issues de questionnaires et d'entretiens menés auprès d'étudiants en éducation et de membres du personnel enseignant d'une faculté d'éducation de l'Ouest canadien. Les premiers constats issus de l'analyse des données suggèrent que les participants perçoivent les relations entre pairs et entre étudiants et enseignants comme des composantes importantes de leurs expériences d'apprentissage en ligne, notamment pour soutenir l'engagement, la participation et la résolution de difficultés. En mettant en lumière les dimensions sociales et subjectives de l'apprentissage en ligne, cette étude contribue aux discussions portant sur les conditions pédagogiques qui favorisent des relations positives et soutiennent l'apprentissage des étudiants dans l'enseignement postsecondaire en ligne.

Mots-clés°: apprentissage en ligne; relations interpersonnelles; enseignement postsecondaire; création de sens; théorie socioculturelle; Community of Inquiry.

Introduction

The digital age presents opportunities for diversified and enhanced learning experiences by promoting inclusiveness, flexibility, and accessibility, and by fostering engaging environments that bridge formal and experiential learning (Vonitsanos et al., 2024). On the other hand, this emerging reality poses complex challenges to education, such as the need for continuous adaptation to new technologies and new modalities for learning, and the risk of widening the digital divide among learners. The growth of online and hybrid courses, especially in post-secondary institutions, is one example of the major changes contemporary education has witnessed (Rahmani et al., 2024). The rise of online learning environments in post-secondary institutions around the globe has led to a greater interest in discovering effective online teaching strategies and ways to promote meaningful learning experiences for online students (Kebritchi et al., 2017).

Online education has gained increased popularity in recent decades (Limperos et al., 2015) and is often promoted for its flexibility and expanded access, but important challenges continue to be documented. Commonly reported disadvantages of online learning include concerns about learning outcomes, student isolation, limited interactivity, and a lack of community (Dumford & Miller, 2018; Rahmani et al., 2024), which have been linked to higher dropout rates when compared to in-person courses (Amoozegar et al., 2022; Shaikh & Asif, 2022). These challenges point to unresolved tensions between technological affordances and the social and relational dimensions of learning. In

particular, these concerns underscore difficulties in fostering meaningful peer and student-instructor relationships in online courses.

Beyond influencing learners' engagement, participation, and sense of belonging, peer and student-instructor relationships are experienced and interpreted differently by learners, shaping how they understand and navigate their online learning experiences. Although existing research has highlighted the importance of interpersonal interaction in online learning, less attention has been devoted to understanding how students make sense of these relationships and the role such interpretations play in shaping learning. Examining learners' perspectives may therefore provide insights into the relational dimensions of online learning that are not fully captured through analyses of interaction patterns alone. Such insights may also help educators adopt practices that foster meaningful social connections and respond more effectively to students' needs.

Against this backdrop and drawing on contributions from education and psychology, this study explores the interconnections between interpersonal relationships and students' learning experiences in post-secondary online courses. More precisely, it examines the subjective dimensions of peer and student-instructor relationships and how these dimensions shape student engagement, collaboration, meaning-making, and responses to challenges in online learning environments.

The main question guiding this inquiry is:

How do peer and student-instructor relationships shape students' online learning experiences in post-secondary education courses?

A secondary question asks:

How are positive interpersonal relationships experienced, understood, and fostered in post-secondary online education courses?

Literature Review

The importance of positive interpersonal relationships with peers and instructors for successful online learning has been recognized in the literature for many years (Anderson, 2008; Garrison & Arbaugh, 2007). Yet, research suggests that the development of such relationships can be notably more challenging in digital environments due to multiple factors including limited access, visual and social cues, and heightened anxiety associated with navigating unfamiliar technologies (Anderson, 2008; Nogueira et al., 2022; He et al., 2022). Scholars have argued that relatedness in digital learning environments is often more difficult because interactions are mediated through technology and provide fewer social and nonverbal cues that support interpersonal connection (Dron & Anderson, 2023).

This suggests that while technology can facilitate connection through platforms, tools, and communication methods (e.g., Zoom, learning management systems, and discussion boards), it does not inherently promote relatedness.

Instead, the quality of students' relational experiences appears to depend largely on how online learning environments are designed and enacted. Accordingly, technology must be leveraged through intentional design and teaching practices that support relationship building (Butz & Stupnisky, 2017; Scardamalia et al., 1989). For example, students should engage in collaborative activities, receive personalized feedback, and be supported through community-building efforts to enhance interaction, social connection, and belonging in online courses (Dalziel, 2015).

Research on post-secondary online education has consistently shown that positive relationships with peers and instructors are associated with a range of desirable outcomes including higher engagement, stronger sense of community, greater satisfaction, and persistence in courses (Hodgson & McConnell, 2019; Hu & Xiao, 2025; Martin et al., 2022; Peacock et al., 2020). Upon collecting qualitative and quantitative data from 1,745 post-secondary students, Rivera-Vargas et al. (2021) found that establishing trust relationships with peers and instructors and relying on their support can be key to helping learners navigate challenges and adapt to online learning environments. Interpersonal relationships can thus be valuable sources of guidance, reassurance, and assistance, especially during periods of transition and uncertainty.

Precisely because peer and student-instructor relationships are understood as central to post-secondary students' online learning experiences, a substantial body of literature has examined these interactions. However, much of this research has tended to emphasize observable human activity in online

environments, such as participation in discussion forums (Dumford & Miller, 2018), communicative behaviours in online interactions (Franzini & Pilli, 2024), and the provision of constructive feedback (Dalziel, 2015). Consequently, research has tended to focus less on learners' subjective experiences and the role interpersonal relationships play in learning-related meaning-making processes. This highlights the need for a deeper understanding of how students experience, interpret, and make meaning of these relationships in online learning contexts.

Addressing this gap, this study explores students' relationships with peers and instructors as a lens through which they engage with and interpret their learning experiences, emphasizing how these relationships shape meaning-making in online educational settings. This study draws on sociocultural theory and the Community of Inquiry (CoI) framework as complementary lenses for understanding how interpersonal relationships and learning experiences intersect in online courses.

Theoretical and Conceptual Foundations

Contributions from Sociocultural Theory

This study adopts a sociocultural perspective (Vygotsky, 1978) as its primary theoretical lens. This perspective conceptualizes learning as a socially situated process, in which knowledge is co-constructed through interpersonal interaction and participation in culturally mediated activities. Central to the sociocultural theory is the understanding that learning is more than an individual

cognitive activity; it is a process through which learners build and negotiate understandings, develop ways of participating in collective activities, and engage in shared cultural practices. In that sense, learning is intertwined with the relationships, interactions, and cultural environments in which it occurs.

From a sociocultural lens, development originates in social interaction (interpsychological activity) before being internalized by the individual (intrapsychological activity), highlighting the interdependence of the social and personal dimensions of learning (Pino, 2005). Through internalization, individuals reconstruct and interpret their experiences at the personal level, making sense of them and attributing new meanings, which underscores the subjective nature of learning (Meireles & Guzzo, 2021; Sawyer & Stetsenko, 2018). Thus, knowledge construction is a multifaceted process that encompasses relational, affective, contextual, and cognitive dimensions. Within this perspective, interpersonal relationships are central to the students' meaning-making processes and learning experiences.

While the sociocultural perspective provides a foundation for understanding the role of interpersonal relationships in learning and meaning-making, the dynamics of online learning invite engagement with a complementary framework that accounts for the ways social, cognitive, and teaching dimensions intertwine in online settings specifically. Sociocultural theory helps explain how learning emerges through socially mediated processes and the meanings learners construct through their experiences. The CoI framework

provides a lens for examining the educational conditions that support these processes in online environments.

Contributions from the Community of Inquiry Framework

The CoI framework (Garrison et al., 2000) conceptualizes meaningful online learning as the intersection of social presence, cognitive presence, and teaching presence. It offers a well-established model for examining how relational and instructional elements interact to support deep and sustained learning in online settings. Among the three presences proposed by the framework, social presence is especially relevant for this study. It relates to how learners express emotions and establish relationships with peers and instructors in educational contexts where communication is mediated through technology (Garrison et al., 2000).

Social presence has received considerable attention in online education research. Data suggests that this presence influences students' overall learning experiences, including aspects related to student satisfaction, sense of belonging, and learning outcomes (Chimbo et al., 2023; Richardson, 2001). Additionally, social presence has been associated with the promotion of collaborative and deeper learning (Garrison & Arbaugh, 2007).

The CoI framework complements the sociocultural perspective by drawing attention to the educational conditions through which interpersonal relationships are enacted and experienced in online learning environments. Social presence is particularly relevant as it helps illuminate how learners perceive and engage in

relationships with peers and instructors in technology-mediated contexts. The integration of sociocultural and CoI perspectives therefore provides complementary insights into how peer and student-instructor relationships shape students' learning experiences and meaning-making processes in online courses.

Methodology

A mixed methods study comprising literature review, an online survey, and in-depth semi-structured interviews is being conducted with both post-secondary students and instructors of education online courses. As contended by Creswell and Plano Clark (2018), mixed methods research should address research questions and hypotheses by rigorously collecting, analyzing, and combining quantitative and qualitative data and results. This study employs an explanatory sequential mixed methods research design (Creswell & Plano Clark, 2018), with a quantitative phase (online survey) followed by a qualitative phase (semi-structured interviews). The qualitative phase receives priority in the interpretation of findings. Figure 1 illustrates the methodology adopted.

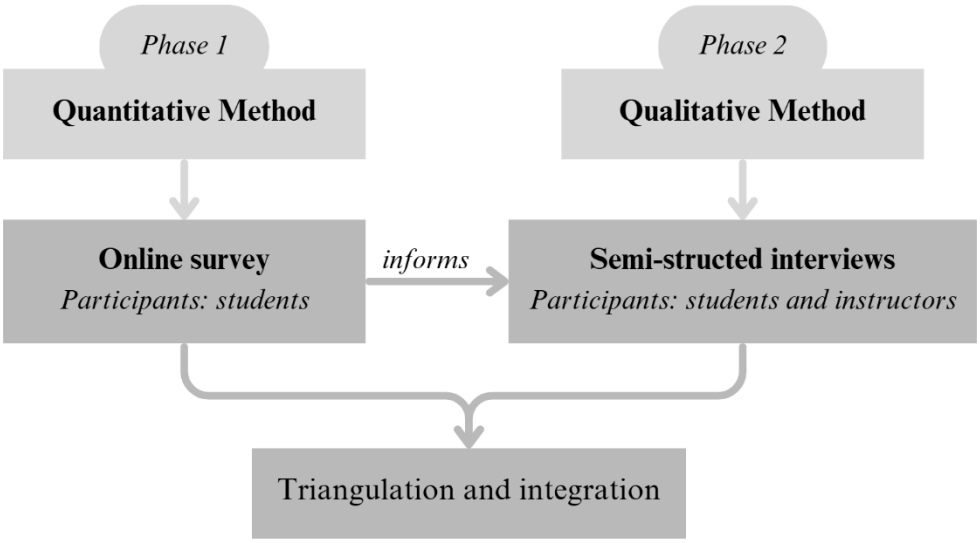


Figure 1: *Explanatory Sequential Mixed Methods Design*

Figure 1 image description *available*

The literature review that preceded Phases 1 and 2 served as a foundation to create the research instruments and analyze the data collected. Data were collected from participants in Phases 1 and 2, and participation was entirely voluntary in both phases. The qualitative phase was designed to further explore emerging survey findings and gain deeper insights into how participants experienced, understood, and made sense of interpersonal relationships in online learning environments.

Data Sources, Collection, and Analysis

Phase 1

Pilot Study. Initially, a pilot study was performed with eight critical friends, so the online survey platform could be tested and feedback collected. This step was important for content validity, identification of issues, and refinement of the instrument. This step also helped determine the approximate survey completion

time, which was estimated at 10 to 15 minutes. After the necessary adjustments, the survey invitation was sent out to Phase 1 participants. The data collected from critical friends were not included in the subsequent analysis because participants were asked to focus on testing the survey platform and identifying potential issues, rather than providing responses intended for research purposes.

Participants. A total of 57 participants engaged in Phase 1. Participants were undergraduate and graduate students enrolled in programs with online courses offered by a Western Canadian Faculty of Education. Students invited to answer the online survey had completed at least one online education course as part of their programs in the 12 months preceding their participation.

Data Collection. Upon providing electronic consent, participants accessed and completed an online survey with 26 questions (using a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree") to assess their perceptions of the relevance of interpersonal relationships in their online learning experiences. Questions were developed based on key concepts of the theoretical framework adopted for this study, including peer and instructor support, collaborative work, open communication, and affective expression.

Examples of questions include:

- "Being able to comfortably express my feelings and emotions when interacting with peers in an online course contributed to my overall learning."

- "I was more likely to ask questions when I had a positive relationship with the instructor."
- "I noticed that working collaboratively with peers enhanced my understanding of the topics studied in an online course."

As participants completed the survey, those interested in contributing further to the study (Phase 2) could indicate their willingness by checking a box.

Data Analysis. Upon the closure of the quantitative data collection period, the online survey responses underwent a screening process to determine their eligibility for inclusion in the study. The contact details of those interested in engaging in Phase 2 were securely saved following ethical protocols, and the survey data were anonymized prior to the beginning of the analysis period. Descriptive statistical analyses, conducted using IBM SPSS Statistics (Version 30), are in the early stages and include the examination of frequency distributions, means, medians, percentages, standard deviations, and Cronbach's alpha coefficients. This will provide a comprehensive overview of participants' responses and allow for an assessment of the internal consistency of the survey instrument. Data from Phase 1 will help shape interview questions.

Phase 2

Participants. A minimum of eight students and two instructors are expected to engage as participants in Phase 2. They are students and instructors of online courses offered by the same Western Canadian Faculty of Education. Students will be purposefully selected from Phase 1, with priority given to those with more online learning experience.

Data Collection. Online individual semi-structured interviews will adopt a conversational structure (Brinkmann, 2023), allowing for flexible interactions between the researcher and the participants. The interview questions will enable participants to discuss various aspects of their online teaching and learning experiences. This will contribute to an understanding of how the development of positive interpersonal relationships with peers and instructors was encouraged and sustained in these environments, and the role these relationships played in students' learning experiences. Interviews will be transcribed and the transcriptions will be sent to participants for verification (Liao & Hitchcock, 2018; Merriam, 1995).

Data Analysis. Pseudonyms will be assigned to all participants to ensure their anonymity. Transcripts will undergo multiple rounds of coding (Miles et al., 2014) to facilitate the identification of recurring patterns and relevant differences across participants' accounts. Codes will then be compared, refined, and grouped into broader categories from which key themes should emerge (Creswell & Plano Clark, 2018). Following this, the quantitative and qualitative findings will be integrated and examined together through triangulation (Creswell & Creswell, 2005). This integrative stage will inform the study's overall interpretation and conclusions.

Emerging Insights

As this doctoral research is still in progress, only preliminary insights from Phase 1 are available at this stage. Phase 1 data collection has been completed and analysis is currently ongoing; therefore, the insights reported here are

subject to further interpretation. A more comprehensive analysis integrating quantitative and qualitative findings will be disseminated following completion of the study.

The emerging insights are based on data collected from 57 student participants. Initial examination of the data suggests that participants perceived interpersonal relationships as important components of their online learning experiences. Overall, a high level of agreement across survey items indicated consistent recognition of the importance students place on peer and instructor relationships for supporting learning and engagement. Students agreed that feeling able to express their views and emotions in online settings enhanced their learning experiences. Collaborative work and positive peer relationships were viewed as fostering participation, understanding, and overall learning. In addition, positive relationships with instructors were viewed as relevant for engagement, participation, and overcoming challenges. These findings reinforce the sociocultural view that learning and meaning-making are shaped through social interaction, highlighting interpersonal relationships as central to learning and broader online educational experiences. These findings also resonate with the CoI framework, underscoring the importance of social presence and teaching presence in supporting meaningful interpersonal connections online.

While both peer and student-instructor relationships were perceived as important to online learning, survey respondents viewed peer relationships as slightly more influential. Future analysis of the interview data is expected to provide further insight into the factors underlying these perceptions. Also,

participants' accounts may help clarify the characteristics through which positive peer and student-instructor relationships are recognized, as well as the pedagogical practices that contribute to the development and sustainability of these relationships in online learning environments. These insights are expected to deepen understanding of the quantitative findings and the phenomenon under investigation.

Following the completion of the independent analyses of the quantitative and qualitative data, the integration phase will take place. The interpretation of findings will be informed by sociocultural theory (Vygotsky, 1978) and the CoI framework (Garrison et al., 2000), providing a nuanced understanding of how peer and student-instructor relationships shape learners' online learning experiences in post-secondary education courses.

Implications

This study contributes to understanding the social, relational, and subjective dimensions of learning in post-secondary online education. While existing research has often prioritized patterns of participation, interaction, and presence in online environments, this study foregrounds how students experience, interpret, and make sense of relationships with peers and instructors in online courses. By integrating sociocultural theory and the CoI framework, it offers a comprehensive perspective that extends beyond observable interaction, attending to meanings learners construct through their relational experiences. Emerging insights suggest that interpersonal relationships influence online learning not only through their perceived importance to

students and instructors, but also through the relational qualities and pedagogical conditions that support their development.

Preliminary insights suggest that peer and student-instructor relationships are closely connected to students' engagement, sense of belonging, participation, and meaning-making. These findings contribute to ongoing discussions about the social dimensions of online learning by highlighting the role of interpersonal relationships in shaping how students experience and navigate online educational environments. They also point to the potential value of fostering learning environments that support meaningful social connections, open communication, collaboration, and instructor presence. As online education continues to expand worldwide, greater attention to these relational dimensions may help educators and institutions create learning experiences that prioritize the social and educational conditions that support meaningful learning and student success. These considerations may be particularly relevant to teacher education programs, where relational competence is central to professional practice.

Limitations

This doctoral research is being conducted within a specific context, drawing participants from a single Faculty of Education in Western Canada. Consequently, the findings should be interpreted in relation to this context, and caution should be exercised when considering their transferability to different institutional, disciplinary, or cultural settings. In addition, the findings presented in this research brief are preliminary. While Phase 1 data collection has been

completed, statistical analyses remain ongoing, and the qualitative phase and integration of quantitative and qualitative findings have not yet been completed. Therefore, the interpretations reported here remain subject to refinement as the study progresses.

As with all qualitative and mixed methods research, decisions regarding the framing of research questions, the selection of conceptual and theoretical lenses, the interpretation of participants' accounts, and the construction of themes are influenced, to some extent, by the researcher's perspectives and scholarly judgment. Alternative interpretations of the data are therefore possible. To enhance the trustworthiness of the study, emerging findings and interpretations are continuously discussed with the research supervisor and supervisory committee and have also been presented at academic conferences, where feedback from researchers and educators provided opportunities for critical reflection and consideration of alternative viewpoints.

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Artificial Intelligence Disclosure

ChatGPT (GPT-5.6 Luna) and Microsoft Copilot (GPT-5-based) artificial intelligence tools were used by the author. *Writing – Review & Editing*: AI was

used to review and edit text to improve flow and coherence, identify and correct spelling and grammatical errors, and assist in responding to reviewer comments. *Writing – Translation*: AI was used to assist with translation and linguistic expression, as translanguaging was part of the researcher's writing process. No AI system contributed to data collection, data analysis, interpretation of findings, or authorship. All outputs were reviewed and edited by the author.

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Image Descriptions

Figure 1 image description: A diagram that shows a two-phase explanatory sequential mixed methods research design. Results from both phases are combined through triangulation and integration.

- Phase 1 (Quantitative Method): Students complete an online survey.
- Phase 2 (Qualitative Method): Semi-structured interviews are conducted with students and instructors.

[Back to **Figure 1**]