

Designing Hybrid Learning for Preservice Teachers: Using a Community of Inquiry Framework to Increase Equitable and Inclusive Learning Environments

Nadia Delanoy 

Werklund School of Education
University of Calgary

Danni Chen 

Department of Language and Literacy
Harbin Institute of Technology

Correspondence:

Danni Chen

Department of Language and Literacy
Harbin Institute of Technology
Email: [chendanni \[at\] hit.edu.cn](mailto:chendanni[at]hit.edu.cn)

Abstract

This article investigates the pedagogical and instructional design process of a hybrid course in preservice teacher education. Guided by the Community of Inquiry (COI) framework, the course design aimed to foster social, cognitive, and teaching presence in a hybrid learning environment. A narrative self-study approach was employed to reflect on our teaching practices as an instructor and as a graduate teaching assistant (GTA) of this course. Data was obtained from our teaching reflections, which examined the impact of implementing a hybrid face-to-face driver model informed by the COI on enhancing preservice teachers' learning experiences. The results suggest that the hybrid course design provides a more inclusive and empowering learning environment. The flexible format allows students to demonstrate their learning and collaborate effectively while developing socioemotional awareness. By examining our experiences and knowledge, this article offers insight into how to effectively incorporate digital technologies and hybrid practices to promote a deeper understanding of lived experience in learning within the context of teacher education programs. With the rapid shift to online learning because of the COVID-19 pandemic, understanding how to design and implement hybrid courses becomes crucial in empowering preservice teachers for the digital era.

Keywords: Community of Inquiry, hybrid learning, preservice teacher education, learning design



Authors retain copyright. Articles published under a Creative Commons Attribution 4.0 (CC-BY) International licence. This licence allows this work to be copied, distributed, remixed, transformed, and built upon for any purpose provided that appropriate attribution is given, a link is provided to the licence, and changes made were indicated.

Introduction

This paper details the design and implementation of a hybrid course in teacher education, focusing on empowering preservice teachers to navigate the post-pandemic educational landscape through innovative digital teaching practices (Jones & Sharma, 2020). The transition to online and hybrid learning models, driven by the pandemic, has highlighted the need to integrate social-emotional and cognitive learning into these platforms to create equitable and inclusive learning environments catering to diverse student needs (Calderón et al., 2021; Walker, 2020).

In designing this course, we emphasized equity, diversity, and inclusion (EDI) principles, which were particularly crucial in supporting students' social and cognitive readjustment following extended periods of remote learning (Walker, 2020). These principles remain essential components of effective course design in all educational settings. By integrating the Community of Inquiry (COI) framework into our teaching practices, we considered how best to help students build a learning culture, develop rich collaborations, and be in an environment where personal and cognitive exploration could go hand in hand. Contextually, this hybrid learning course was mandatory for education students enrolled in a western Canadian university. The number of students enrolled in this course was approximately 400. This course introduced preservice teachers to varied interpretations of teaching and learning as practiced in Western educational research. In hybrid learning environments, education takes place through multiple modalities. This approach depends on the instructor and graduate teaching assistant's (GTA) multi-modal learning design and how students can engage with and apply the course material within their learning domain. This teaching context involved a hybrid, undergraduate-level education course aimed at students seeking a foundational understanding of learning and teaching theories. This hybrid course combined in-person interactions, such as lectures and group discussions, with digital components such as online discussion boards, polls, Zoom gatherings, and responses.

Theoretical Framework to Practice

The theoretical framework for our hybrid face-to-face course was based on the COI framework, highlighting the importance of social, cognitive, and teaching presence for effective hybrid learning environments (Anderson et al., 2001; Garrison et al., 1999; Short et al., 1976).

Social presence focuses on fostering community connections, creating an environment where learners engage in social interaction, collaboration, and knowledge sharing (Garrison et al., 1999). This aspect of COI was crucial in our hybrid learning community, as it allowed students from diverse backgrounds to communicate with peers and instructors, promoting mutual understanding, inclusion, and the reduction of prejudices and discrimination. Cognitive presence emphasizes critical thinking skills and deep understanding (Garrison et al., 2001). Through a dynamic and overlapping condition of social presence, cognitive presence, and teaching presence, COI aids in framing an intentional learning experience and helps guide students toward reflective and deep learning experiences that go beyond mere knowledge acquisition, emphasizing its application and innovation (Garrison et al., 1999). The constitution of community in this framework was integral in considering the importance of a cohesive approach

to this type of course given the state of the world at the time. Learning needed to be inculcated in both a highly constructivist and socioemotionally safe space.

As Garrison et al. (1999) affirmed, the essence of constructivist learning environments superimposed within an online or hybrid environment necessitates a fulsome understanding of how each presence interrelates and the ways in which a multidimensional lens can result in an enriched and multileveled learning experience. For example, cognitive engagement helps students recognize individual and collective differences, nurturing critical thinking and empathy. Furthermore, the initial events can activate dynamic learning and lead into knowledge building that can be constructed collaboratively and support students to engage within an environment of trust (Garrison et al., 2001). Teaching presence highlights the instructor's role as a designer, facilitator, and direct instructor in the class's learning journey (Anderson et al., 2001). In our hybrid course, students were active explorers and constructors of knowledge, working with instructors to solve problems and generate new insights. This facilitated exploration fostered innovative thinking and practical abilities, providing a platform for students to showcase their talents and realize their potential. These elements did not happen in a vacuum, and each facet of social presence, cognitive presence, and teaching presence were encased in multidimensional and essential components to create the COI within this hybrid and online learning environment (Garrison et al., 2001).

These elements of the COI collectively created a supportive and inclusive learning environment where diverse perspectives were valued and respected. By emphasizing social, cognitive, and teaching presence and coalescing equity, diversity, and inclusion as part of the fabric of learning, this course for a large plenary was effectively designed to engage and support all learners.

Implementation Reflection

A narrative self-study approach was employed to enable deep reflection on our course design and delivery (Kitchen, 2020). This method effectively explores curriculum, with educators' knowledge being vital for enhancing teaching practices (Connelly & Clandinin, 1988; Kitchen, 2020). A series of questions was used to guide the dialogical approach and facilitate the dialogical process between us as the instructor and the GTA (see Appendix). Guided dialogues were recorded and thematically coded to explore the advantages and disadvantages of the course design (Saldaña, 2021). The coding process involved multiple rounds of analysis. First, we independently conducted initial coding of the dialogue transcripts to identify emergent themes. This was followed by focused coding to develop more refined categories. We then met to compare and discuss the codes, resolving any discrepancies through consensus. The final codebook included themes related to pedagogical effectiveness, student engagement, and assessment strategies.

The thematic prompts used for reflection were structured around four key areas: (a) course learning objectives and their achievement, (b) effectiveness of instructional strategies, (c) challenges encountered in course delivery, and (d) opportunities for improvement. These prompts were used consistently throughout the semester to guide the regular dialogical reflections between the instructor and the GTA.

Practices and Implementation

The course was designed using the foundations of the COI framework. We considered how each dimension linked to the creation and the implementation of the course. Below are the key areas where the framework was applied.

Community of Inquiry: Social Presence

In a course of this size, having hundreds of students precipitates the need to foster a community quickly as the term begins. Having students work within knowledge-sharing groups and get to know a core number of peers helped mitigate feelings of isolation that can occur in a large plenary. Our role was to build relationships with students, creating an environment of trust and community from the start. Using Zoom gatherings, discussion board conversations, email, and an online parking lot for students' queries all developed a sense of belonging amongst students in hybrid ways. Students knew their participation and presence were critical to the sharing and collaborative tasks designed for the course. Moreover, as the students were all in their first year, the relationality of being in the same circumstances and traversing their participatory learning and evolving teacher identity created commonalities and trust amongst the student body and more so within the knowledge-sharing groups (cf. Thoms & Eryilmaz, 2015).

Community of Inquiry: Cognitive Presence

The integration of online discussion boards in this hybrid course created a platform for students to reflect on and apply course content while sharing their thoughts with their instructor and GTA (cf. Lai, 2015; Rennie & Smyth, 2019). Each week, a prompt was posted on the discussion boards to guide students in curating relevant content and reflecting on their personal learning experiences in both a visual representation and a text-based way. These weekly prompts aligned with both Bloom's taxonomy and the practical inquiry model that underpins cognitive presence in online learning environments (Garrison et al., 2001), by challenging students to engage deeply with the material to demonstrate their critical thinking for facilitating deep learning in online educational contexts. For example, one week's prompt asked students to discuss how they observed the teaching theory described during the plenary in their previous learning and teaching experiences and reflect on these learnings in the context of their own lives. The GTA extended the discussion through Zoom to complement the asynchronous responses, and these moments promoted critical reflection. In encouraging students to consider how they might use this knowledge in their future practical learning, learning became transferable (Calderon & Sood, 2020). This online component in hybrid learning encourages students to connect theoretical concepts to real-life situations, enhancing their understanding and retention of material. Additionally, the online components serve as a platform for assessment, evaluating students' comprehension, the connections they make to their personal experiences, and their use of visuals and imagery to support their ideas and application. Thus, hybrid learning, by encouraging learners to engage in critical thinking and problem-solving discourse, provides opportunities for interaction with complex concepts and facilitates meaningful reflection and discussion.

Community of Inquiry: Teaching Presence

Uniquely in a plenary style, the teacher could be seen as apart from the learning process; however, in the design and initial communications with the students, we indicated that good

pedagogy would be seamlessly integrated into learning. Therefore, the teaching process included the teacher greeting students at the classroom entrances, continuously walking up and down the rows, using a microphone to give students a voice, and starting the class with three prompts based on humanistic principles. For example, the instructor shared her own journey in education and included the positives and areas of growth. Students were invited to share their own educational journey, highlighting both positives and areas for growth or considerations of psycho-social competencies, such as empathy or compassion, that could be honed. The instructor also invited students to use the platform Menti (<https://www.mentimeter.com/>) to share their perspectives on defining themselves as future teachers, important aspects of building trust, and how their notions of learning have evolved from their K–12 experiences. In another instance, we reminded students that they were adult learners and that the perspectives shared, whether in the course readings or in the classes, were part of helping them find their own truths and, as such, should be positively reflective of what information was being shared, with an awareness of the bias that could be held. A culture of ethical conduct was fostered through guided self-reflection and participatory learning, modeling, and communicating EDI principles (Garg & Goel, 2022). All these elements helped students feel part of a community dedicated to finding their sense of selfhood through various mediums, including collaborative conversations.

Technology as a Vehicle for Learning

In the COI framework, technology is not just a vehicle but a medium through which students can learn. The design for this hybrid learning experience encapsulated both asynchronous and synchronous components; students were able to contemplate their own identity and understanding of the field of education while sharing on a discussion board, working in knowledge-sharing groups, engaging in Zoom gatherings, or using digital tools to convey their understanding and processing a thought-mining approach the course. This approach allowed for a richer, more intentional, and more interactive learning experience. The goal of this hybrid learning design was to provide opportunities for students to synthesize their learning in both synchronous and asynchronous ways, considering their own identity and relationship to the field of study as they engaged in group activities within a COI framework.

Implementation

In our narrative self-study approach, we used prompts (see Appendix) to ascertain the efficacy of the COI framework for this course. These prompts offered focused insights into the benefits and constraints of using this theoretical framework to guide the course design and its subsequent redesign. Through our systematic analysis of instructor and student reflections, discussion board interactions, and course artifacts, we identified several key benefits and constraints that emerged during the implementation process. The benefits of the COI framework were particularly evident in fostering active engagement and authentic learning experiences. As one student reflected, “The weekly discussions pushed me to think beyond theoretical concepts and consider real-world applications in my future classroom.” This sentiment was echoed across multiple student responses, highlighting the framework’s success in bridging theory and practice. The collaborative aspects of the framework also proved valuable, with students consistently reporting enhanced learning through peer interaction. The GTA noted, “Students began building on each other’s ideas, creating rich discussions that went beyond surface-level understanding.” This observation was supported by the quality of student contributions in discussion forums, where complex theoretical concepts were explored through multiple perspectives. However, the implementation also revealed several challenges. The risk of

shallow engagement was particularly notable in early discussions, though this improved with increased instructor guidance. As the instructor reflected, “We needed to carefully balance providing structure while maintaining space for authentic student voice.” The issue of content repetition and maintaining academic integrity required ongoing attention and strategic adjustments to discussion prompts. Table 1 summarizes these findings, representing the key themes that emerged from our analysis. This table explores each of the benefits and constraints in greater detail, supported by specific examples from course interactions and our reflections.

Table 1

Benefits and Constraints: Design and Implementation With the Community of Inquiry Framework

Benefit or Constraint	Description
Benefit	
Promotes active knowledge-sharing	Provides a platform for instructors and GTAs to invite students to actively participate in knowledge sharing. This encourages students to bring readings, theories, and concepts to life by sharing their thoughts, ideas, and questions, fostering a deeper engagement with course content.
Authentic learning experiences	Questions given to students are rooted in authentic or real-world educational experiences, fostering a strong connection to course outcomes. This approach helps students develop a practical understanding of how theory applies in the classroom and prepares them for future teaching roles.
Collaborative and visual communication	Enables students to communicate their learning in collaborative and visually appealing ways through digital assessment tools and platforms. This not only enhances the presentation of their ideas but also promotes a more engaging and interactive learning experience.
Continuous reflection and sharing	Affords students the ability to share their ongoing thoughts related to weekly content prompts, fostering a culture of continuous reflection and learning. As they engage with peers, they can deliberate on content in greater detail, promoting constructivist learning processes.
Multi-level feedback and guidance	Facilitates multiple levels of constructive feedback from instructors and TAs, fostering exploratory and participatory learning among students. This timely and constructive feedback supports students' learning and development, helping them build their understanding and application of learning related to discussion board prompts.
Dynamic learning environment	Creates a dynamic and interactive learning environment that enhances student engagement and motivation. This environment encourages peer-to-peer learning, as students engage with each other's perspectives and ideas, fostering a sense of community and collaboration.
Preparing future educators	Throughout the course, students are encouraged to consider the needs of future students, helping them develop into more effective educators. This holistic approach ensures students are not only mastering the content but also developing the skills and mindset needed to succeed in the classroom.

Constraint

Risk of shallow responses	Online discussion boards may encourage students to provide short and superficial responses, limiting the depth of engagement and reflection on course material.
Repeated themes and content	Due to the bounded nature of the literature and learning resources, students may repeat main themes and ideas in their responses, reducing the diversity of perspectives and insights.
Challenges with academic integrity	Students may inadvertently be influenced by their peers' posts, leading to a lack of originality and groupthink that undermines academic integrity.

Conclusion

The practice approach that, in this study, included the design and reflective process to evaluate the implementation of the course through a COI frame, indicates that a hybrid face-to-face course format offers both synchronous (in-person) and asynchronous (online) opportunities for students to demonstrate their learning and collaborate flexibly. This approach helped students develop deeper socioemotional awareness through self-management in a learning environment that used active teaching practices. The hybrid face-to-face course design afforded the ability to use various digital assessment tools such as online discussion forums, the Desire to Learn (D2L) learning management system, and multimedia resources.

We fostered social presence and promoted cognitive presence through digital assessments and activities that encouraged guided reflection. Additionally, teaching presence was facilitated through online instructional strategies such as providing timely feedback through D2L and offering guidance in both online and in-person learning environments. By integrating these online components into our hybrid face-to-face course design, we created a more inclusive and empowering learning experience for preservice teachers. Incorporating the COI framework into our hybrid design aimed to provide students with personalized and diverse learning experiences that better met their needs and promoted growth.

This approach responds flexibly to the changing educational landscape, equipping future educators with the skills and knowledge necessary to advocate for inclusive practices in their classrooms. Further strengthening the connection between COI and equitable learning environments, several key elements of the framework directly contributed to inclusivity. The social presence component of the COI is foundational to equity in that it creates opportunities for all students to participate and be heard, regardless of their communication preferences or cultural backgrounds. Through multiple channels of expression (synchronous, asynchronous, verbal, written), students can engage in ways that best suit and promote their learning styles and cultural norms. Moreover, cognitive presence supports inclusivity by allowing diverse perspectives and ways of knowing to emerge. The framework's emphasis on critical thinking and reflection enables students to bring their unique experiences and cultural knowledge into the learning process, validating different ways of understanding in applying course content. Third, teaching presence in the COI framework facilitates equity by ensuring that instructors and GTAs actively monitor and adjust their teaching strategies to address diverse learning needs. This adjustment includes providing multiple forms of content representation, offering varied assessment options, and creating structured support systems that acknowledge and accommodate different learning paces and styles.

The integration of these three elements into our hybrid course created a learning environment where diversity was not just acknowledged but leveraged as a strength. For example, when students shared their cultural perspectives on discussion boards or in collaborative activities, it enriched the learning experience for all participants while ensuring that traditionally marginalized voices were heard and valued. In a significant way, these elements needed to be emphasized more given the plenary style of the class to reinforce the underpinning of the COI. In doing so, we advanced EDI in preservice education, by modeling and preparing a new generation of educators to create equitable, diverse, and inclusive learning environments for all students. The educational importance of this practice approach lies in the recursive interchanges between the instructor and the GTA in the design and implementation of this type of model due to the large class size. By examining the experiences and knowledge of an instructor and a GTA, this study offers insights into effectively incorporating the COI presences into class design and implementation.

Authors' Contributions

Both authors contributed to the conception, design, and analysis of this project, and drafted the article. Both authors completed the analysis and interpretation of the data and reviewed the final content.

Open Researcher and Contributor Identifier (ORCID)

Nadia Delanoy  <https://orcid.org/0000-0002-1761-9016>

Danni Chen  <https://orcid.org/0000-0003-1566-155X>

Ethics Statement

Ethics approval was not required as this article describes a practice rather than presenting findings of a research study. Both authors offered their personal experiences to the proceedings and presentation topic.

Conflict of Interest

The authors do not declare any conflict of interest.

Data Availability Statement

The data is not available since this paper talked about the practice rather than a conventional research study.

References

- Anderson, T., Rourke, L., Garrison, D. R., & Archer, W. (2001). Assessing teaching presence in a computer conferencing context. *Journal of Asynchronous Learning Networks*, 5(2), 1–17.
https://auspace.athabasca.ca/bitstream/handle/2149/725/assessing_teaching_presence.pdf?sequence=1

- Calderón, A., Scanlon, D., MacPhail, A., & Moody, B. (2021). An integrated blended learning approach for physical education teacher education programmes: Teacher educators' and preservice teachers' experiences. *Physical Education and Sport Pedagogy*, 26(6), 562–577. <https://doi.org/10.1080/17408989.2020.1823961>
- Calderon, O., & Sood, C. (2020). Evaluating learning outcomes of an asynchronous online discussion assignment: A post-priori content analysis. *Interactive Learning Environments*, 28(1), 3–17. <https://doi.org/10.1080/10494820.2018.1510421>
- Connelly, F. M., & Clandinin, D. J. (1988). *Teachers as curriculum planners: Narratives of experience*. OISE Press.
- Garg, M., & Goel, A. (2022). A systematic literature review on online assessment security: Current challenges and integrity strategies. *Computers & Security*, 113, Article 102544. <https://doi.org/10.1016/j.cose.2021.102544>
- Garrison, D. R., Anderson, T., & Archer, W. (1999). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, 2(2–3), 87–105. [https://doi.org/10.1016/S1096-7516\(00\)00016-6](https://doi.org/10.1016/S1096-7516(00)00016-6)
- Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking and computer conferencing: A model and tool to assess cognitive presence. *American Journal of Distance Education*, 15(1), 7–23. <https://auspace.athabasca.ca/handle/2149/740>
- Jones, K., & Sharma, R. (2020, April 21). *Reimagining a future for online learning in the post-COVID era*. SSRN. <http://dx.doi.org/10.2139/ssrn.3578310>
- Kitchen, J. (2020). Studying the self in self-study: Self-knowledge as a means toward relational teacher education. In O. Ergas & J. K. Ritter (Eds.), *Exploring self toward expanding teaching, teacher education and practitioner research* (pp. 91–104). Emerald Publishing.
- Lai, K.-W. (2015). Knowledge construction in online learning communities: A case study of a doctoral course. *Studies in Higher Education*, 40(4), 561–579. <https://doi.org/10.1080/03075079.2013.831402>
- Rennie, F., & Smyth, K. (2019). *Digital learning: The key concepts* (2nd ed.). Taylor and Francis. <https://doi.org/10.4324/9780429425240>
- Saldaña, J. M. (2021). *The coding manual for qualitative researchers* (4th ed.). Sage.
- Short, J., Williams, E., & Christie, B. (1976). *The social psychology of telecommunications*. Wiley.
- Thoms, B., & Eryilmaz, E. (2015). Introducing a Twitter discussion board to support learning in online and blended learning environments. *Education and Information Technologies*, 20(2), 265–283. <https://doi.org/10.1007/s10639-013-9279-3>
- Walker, T. (2020, April 15). *Social-emotional learning should be priority during COVID-19 crisis*. National Education Association. <https://www.nea.org/nea-today/all-news-articles/social-emotional-learning-should-be-priority-during-covid-19-crisis>

Appendix

Dialogic Questioning Sequence

1. Why is it important to provide opportunities for students to share lived experiences online in an in-person classroom during the pandemic and beyond?
2. What are the objectives of this course, and how does its delivery model foster social-emotional learning?
3. How can the Community of Inquiry (COI) framework inform this hybrid course design?
4. What social benefits can a hybrid-learning design bring to teaching and learning?
5. How can we integrate synchronous and asynchronous methods for students to have time to digest, reflect, and share their lived-experiences and diverse perspectives with their peers (specifically, what evidence are we seeing that indicates students are motivated and engaged)?
6. How can we foster socioemotional learning within the context of learning and content sharing through a hybrid face-to-face model?
7. How can we empower preservice teachers to enhance their understanding of teaching and learning through visual representations and peer sharing?