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Designing Group Work in Online Courses to Develop Collaboration Skills in Preservice Teachers

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Abstract

As online courses become more prevalent in higher education, there is much to understand about the design of group work assignments. In teacher education programs, learning outcomes that are part of group work assignments can be a lever used to help develop professional collaboration skills needed for the profession. Using case study research, the authors synthesize findings collected from instructors and students at two Canadian post-secondary institutions offering online courses in their Bachelor of Education programs. Building understanding of how group work can be designed to develop professional skills required in the teaching profession through online course delivery, data were collected through an online survey (N = 85), semi-structured interviews with a subset of 22 instructors and students, and course documents provided by instructors. The analysis of the data identified four design considerations for online group work: (a) explicitly define the objectives of the group activities, (b) ensure ongoing teacher guidance and support, (c) form groups with careful consideration in relationship to the activity, and (d) utilize technology to support collaboration. Results of this study serve to benefit faculty, students, and educational leaders in understanding how group learning in online courses can be designed to develop professional collaboration skills.

Keywords: group work, online learning, teacher education, instructional design, case study research

Introduction

Higher education trends continue to show a demand for online learning (Johnson, 2019; Muscanell, 2024; NSSE 2021). In Canada, 93% of post-secondary institutions already offered online courses prior to the pandemic (Johnson, 2019). Developing online collaboration skills can help students with future employability, future careers, and as global citizens (Lock & Duggleby, 2018; Read et al., 2022). One of the advantages of designing group work activities in online courses is the opportunity for students to develop soft skills, such as communication skills and teamwork that contribute to professional growth and can be transferrable to the profession (Lowell & Ashby. 2018). Collaborative problem solving involves students' active participation through sharing information and ideas, asking questions, comparing perspectives, consensus building, identifying knowledge gaps, and resolving disagreements towards a common goal (Tawfik et al., 2014). Engagement in collaborative learning activities and team-based learning can also lead to a sense of connectedness in online learning environments (Parrish et al., 2021).

However, research has also reported numerous challenges with online professional collaboration, such as difficulty scheduling group meetings and a lack of time or commitment (Kasim et al., 2022; Vartiainen et al., 2022). There can also be language barriers and challenges learning how to use technologies (Han & Resta, 2020) and issues with internet connectivity (Kasim et al., 2022). Other challenges can include lack of participation by one or more of the group members, how groups are formed, and lack of familiarity with the online tools (Read et al., 2022). Asynchronous collaboration can also contribute to feelings of disconnectedness among students (Kupczynski et al., 2013). These challenges can lead to issues related to grade fairness and social loafing/free-riding behaviors (Gunning et al., 2022; Havard et al., 2023).

Collaboration skills are important competencies for the teaching profession identified in provincial teaching standards (e.g., Alberta Education, 2023). For example, the Alberta *Teaching Quality Standard* calls for "collaborating with other teachers to build personal and collective professional capacities and expertise" (p. 3). Collaboration skills can be fostered through group work assignments that take place online (Meijer et al., 2020; Strijbos, 2016). Despite evidence that well-designed group work supports student learning (Brame & Biel, 2015; Clarke & Blissenden, 2013; Hammond, 2017; Kleinsasser & Hong, 2016), there is limited research on effective strategies designed and used by instructors in online learning contexts (LaBeouf et al., 2016; Thom, 2020). Hence a study with instructors and students in online teacher education courses can serve to inform design considerations for group work assignments intended to help prepare students in developing collaboration skills for the profession (Hammond, 2017; Kleinsasser & Hong, 2016).

Methodology

This research used a case study approach (Merriam & Tisdell, 2016). The overarching research question was: *How do instructors design group work in online courses to develop preservice teachers' professional collaboration skills?* Participants included instructors from two Canadian post-secondary institutions who were teaching Bachelor of Education online courses, and the students enrolled in these courses. Methods included surveying and interviewing instructors and students in online undergraduate courses in education. Course documents were also collected from instructor participants, and included course outlines, group protocols, and assignment descriptions. In total, 85 survey responses were collected, with 68 students and 17 instructors

completing the online survey. Twenty-two interviews of survey participants were completed (12 students and 10 instructors). Students were at different stages of completion in their Bachelor of Education degree, and instructors taught a range of course offerings in the program. Social Interdependence Framework was used a lens for analysis (Johnson et al., 2014). Coding was completed by all members of the research team, and strategies to ensure intercoder reliability were employed.

Results

The results included four design considerations for online group work: (a) explicitly define the objectives of the group activities, (b) ensure ongoing teacher guidance and support, (c) form groups with careful consideration in relationship to the activity, and (d) utilize technology to support collaboration. Students described group work assignments that took place synchronously and asynchronously using the learning management system, discussion boards, and some group projects resulted in a shared grade. Instructors noted how teaching presence and providing groups with feedback can contribute to the success of online group work. Teaching presence was described as checking in with groups, monitoring interactions, assisting with problem-solving, and facilitating scheduling of group meetings or work periods. Instructors shared how they provided ongoing, formative feedback in written format to support group work activities. Instructors and students interviewed in the study favored small group sizes (3–5). However, their views were divided when discussing how groups should be formed with some preferring the instructor create groups and assign students to groups, while some participants preferred forming student-selected groups. Instructors commented that creating groups in online environments can be difficult due to not knowing students. Two strategies were highlighted as successful: generating random groups so students have opportunities to work with a mix of peers in the class, and forming groups based on identified criteria (e.g., disciplinary interests). Participants also recognized specific learner attributes that can contribute to successful online group work including individual accountability and commitment to completing work, effective time management skills, and student rigor with attention to detail.

Summary

Results from this study indicate four design considerations for online group work that cam contribute both to the successful achievement of the task(s) and the development of pre-service teachers' professional collaboration skills. First, when writing task descriptions, clearly articulate the purpose of group work. Inclusion of formative and summative assessments used for group work is recommended. As well, if the purpose of the group task extends beyond a summative grade (e.g., developing skills for the profession), both including the reasons into a clearly articulated purpose and indicating through the task description as to where these additional purposes should be explored can support students' learning. Second, provide learner support through teaching presence in the forms of communicating with groups, monitoring interactions, assisting with problem-solving, providing instructor feedback, and facilitating scheduling of group work periods. Optimally, teaching presence is ongoing and designed into synchronous and asynchronous task components. Third, be intentional in how groups are formed, and explain the rationale behind the method selected for creating the groups. Last, leverage digital tools for collaboration. However, learners will have varying levels of comfort in using technology. When selecting digital tools, it is recommended to keep it simple.

The results of this research have been widely disseminated at national and international conferences and other scientific events. Furthermore, the study has led to various publications

that further highlight and expand the findings of this article (e.g., Hartwell et al., 2022; Hartwell et al., 2024; Nogueira et al., 2022; Nogueira et al., 2023).

Author Contributions

Conceptualization: BB, CT; Data curation: BB, CT, AH, BN; Formal Analysis: BB, CT, AH, BN Funding acquisition: BB, CT; Investigation: BB, CT; Methodology: BB, CT, AH; Project Administration: AH; Resources: BB, CT; Writing draft, review, and editing: BB, CT, AH, BN

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Ethics Statement

Ethical approval for this proceeding was obtained from the University of British Columbia (REB21-1147).

Conflict of Interest

The authors do not declare any conflicts of interest.

Data Availability Statement

Data is not available as per ethics agreement for this study. The author has taken responsibility for ensuring that all steps necessary to protect the privacy of human research subjects have been taken.

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