

Examining Student Reported Interaction and Satisfaction in Higher Education Administration Graduate Seminar-Style Blended Courses

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Abstract

The purpose of this case study was to examine how a professional graduate program in higher education administration developed seminar-style courses in a blended format. Blended courses involved two extended in-person weekend sessions with synchronous online sessions, and other asynchronous coursework in between. This study explored the importance of interaction, student satisfaction, and motivation to student success. Data were collected through student surveys and faculty interviews from 11 courses within the same graduate degree program at a private, highly selective research university from spring 2016 through spring 2018. Class size was the biggest factor relating to student interaction. This study also found synchronous online discussions had a greater impact than other learning activities and that satisfaction and interaction had a slight increase over time as students and instructors became more comfortable with the format.

Keywords: blended learning, graduate, seminar-style, community of inquiry, interaction

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Examining Student Reported Interaction and Satisfaction in Higher Education Administration Graduate Seminar-Style Blended Courses

Despite the growth in adoption of blended learning, most research and practice in higher education to date has focused on introductory-level coursework, often couched in the need to expand access and engagement at a large scale. Little research has examined blended learning within graduate, seminar-style courses focused on small classes and intimate peer-to-peer and peer-to-instructor interactions. These small, seminar-style courses have been a staple of higher education graduate programs for nearly as long as there have been institutions of higher education,

but while other courses have evolved to many delivery methods and formats, the graduate seminar has remained mostly the same. The purpose of this case study was to examine how a professional graduate program in higher education administration at a private research university addressed this gap in developing seminar-style courses in a blended format. Like many blended and online learning initiatives, these blended courses were adopted to support students who desired an alternative format, either due to hardships involving location and scheduling or preferences for learning style and ability status. For this program, the 11 blended courses were structured with two extended in-person weekend sessions (eight hours on either a Saturday or Sunday), four to six two-hour synchronous online sessions, and other asynchronous coursework in between.

Recognizing the importance of student interaction through discussion and collaboration in graduate, seminar-style courses, this study asked specifically: How can graduate, seminar-style courses offered in a blended format within a higher education administration program promote quality student satisfaction, motivation, and interaction among peers and instructors?

To address this question, this paper starts by examining the relevant literature on student interaction and blended format courses as well as the relationships between satisfaction, motivation, and interaction. Then, the paper discusses the survey and interview data collection methods employed to examine student reported interaction and satisfaction before reporting the results and discussing the implications of those results. Ultimately, by undertaking this study, these results might help inform the design and delivery of graduate, seminar-style courses in a blended format at other universities and programs and aid to understand how these courses could be designed to support student interaction and satisfaction.

Review of Relevant Literature

This study focused on interaction and satisfaction as two key, closely-linked indicators of success for graduate, seminar-style courses in a higher education administration program. The following review of literature first covers how interaction has been shown to relate to student success, followed second by an examination of how student satisfaction is tied to both interaction and student success, and third by looking at the relationship between student motivation, satisfaction, and interaction.

Interaction as an Indicator of Student Success

The study of peer and instructor interactions in education predates online learning. Significant research from when researchers began to study interaction has shown that social, emotional, and cognitive interactions contribute to satisfaction and better learning outcomes, regardless of setting (e.g., Vygotsky, 1978; Wells, 1999). With the rise of online and blended learning, research has expanded and evolved conceptions of interaction to incorporate nonverbal and asynchronous communication as well as in-person and synchronous online communication (e.g., Garrison & Arbaugh, 2007; Gunawardena, 1995). As a result, early distance educators defined four types of interactions: (1) learner-teacher, (2) learner-content, (3) learner-learner, and (4) learner-interface (Hillman, Willis, & Gunawardena, 1994). Building off of this early understanding of online student interaction, the Community of Inquiry framework (CoI) developed a more complex conceptualization of interactions in online and blended environments (Garrison, Anderson & Archer, 2000). See Figure 1 for a visualization of the framework.



Figure 1. A Community of Inquiry framework (Garrison, Anderson & Archer, 2000).

The CoI framework consists of three interrelated parts: (1) social presence, (2) cognitive presence, and (3) teaching presence (Garrison, 2017). Social presence is “the ability of participants to identify with a group, communicate openly in a trusting environment, and develop personal and affective relationships progressively by way of projecting their individual personalities” (Garrison, 2017, p. 25). Cognitive presence is defined generally as “the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry” (Garrison, Anderson, & Archer, 2001, p. 11). Finally, teaching presence is “the design, facilitation and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes” (Anderson, Liam, Garrison, & Archer, 2001, p. 5).

The CoI framework has been used and validated countless times since its initial proposal (Kineshanko, Arthur, Garrison, & Graham, 2016). Blended learning, in particular, has received increased attention for its effectiveness in encouraging greater student interaction with peers, instructors, and content (Garrison, 2017). This, in turn, has led several studies to conclude that blended learning exceeded outcomes of both face-to-face and online instruction. In a metacognitive analysis by the U.S. Department of Education examining 99 studies that contrasted online or blended learning with face-to-face instruction, the key finding was that “instruction combining online and face-to-face elements had a larger advantage relative to purely face-to-face instruction than did purely online instruction” (Means, Toyama, Murphy, Bakia & Jones, 2009, p. xv). This important finding is further supported in smaller class sizes based on a study that examined blended learning in small liberal arts colleges against historical data of traditional format

courses and found that the blended course performance was superior (Kolowich, 2012). These findings provide compelling evidence that blended learning courses focused on interaction result in higher student success outcomes compared to either in-person or fully online courses. The next area of literature will focus on another key part of the research question for this study: the relationship of student satisfaction to interaction and student success.

Relationship of Student Satisfaction on Interaction and Student Success

While interaction has been shown to relate to overall student success, it has also consistently been related to student satisfaction (e.g., Ali & Ahmed, 2011; Kuo, Walker, Schroder, & Belland, 2014; Lee, 2012). Several studies to date have argued the CoI framework is an important determinant of student satisfaction as well as perceived learning (Akyol & Garrison, 2008; Arbaugh et al., 2008; Shea, Li, Swan, & Pickett, 2005). This follows closely with other research on online learning that indicates a strong predictive relationship between interaction and student satisfaction (Jung Choi, Lim & Leem, 2002; Bolliger & Martindale, 2004). For example, Jung et al. (2002) found undergraduate students in a collaborative interaction group perceived higher satisfaction than those who were not, while Bolliger and Martindale (2004) found interaction between learners and instructors was the most important factor impacting student satisfaction in a sample of graduate students enrolled in online instructional technology courses. Finally, in a large meta-analysis of studies focused on social presence, Richardson, Maeda, Lv, and Caskurlu (2017) found there was a moderately large positive average correlation between social presence and satisfaction as well as between social presence and perceived learning across all of the studies they examined.

Satisfaction, in turn, has been linked to positive outcomes for higher education in student success (Chang & Smith, 2008; Noel-Levitz 2011) and student retention (Debourgh, 1999; Ali & Ahmad, 2011). As such, just like interaction, student satisfaction has been consistently tied to overall student success and is an important metric by which to measure the efficacy of a course. The final area of literature looks at one more complicating factor for student interaction and success: the motivation of students to take a course in a blended format and that impact on their interaction and satisfaction.

Impact of Motivation on Interaction and Student Satisfaction

One question that problematizes any understanding of student interaction, satisfaction, and success relates to motivation—both intrinsic and extrinsic—within a course or subject matter. A number of researchers have examined the impact of motivation on learning (e.g., Deci, Koestner, & Ryan, 1999; Deci & Ryan, 2002; Lepper, 1988). While common sense might suggest that motivation improves learning, researchers have noted the importance of examining external versus internal motivation on the degree of learning achieved (Deci et al., 1999; Deci & Ryan, 2002). To this end, self-determination theory in psychological research provides the most widely used and nuanced perspective on the examination of intrinsic and extrinsic motivation on learning and well-being (Deci & Ryan, 2002).

Self-determination theory and its related subdisciplines propose a framework for developing intrinsic motivation based on the degree to which an activity provides the basic psychological needs of autonomy, competence, and relatedness. Self-determination theory thus suggests that if students are motivated to participate in a course whether through events, conditions, or other personal factors, they will gain more from that experience and if they are

disinterested in a course, including based on the format of that course, then they will be less motivated to engage (Deci & Ryan, 2002).

Based on this understanding of motivation, several studies have discussed how the themes of online experience and subject matter of a course may result in variations of how students perceived their cognitive presence and skills expectations (e.g., Arbaugh, Bangert, & Cleveland-Innes, 2010; Oustz, 2006). A study of 1,500 undergraduate and graduate students at two institutions determined that students were more likely to achieve their expectations for social, cognitive, and teaching presence in courses related to academic disciplines that encouraged problem-solving, interaction discussions, and group projects (Arbaugh, Bangert, & Cleveland-Innes, 2010). Oustz (2006) also confirmed the relevance of the CoI framework for disciplines in which collaboration and communities of practice are support tools for students in fulfilling the course objectives. In both instances, however, there was also a positive correlation of students' interest in the course material (i.e., focus of their degree) to their satisfaction and achievement of learning goals (Arbaugh et al., 2010; Oustz, 2006). Lee et al. (2011) also noted students' expectations regarding the degree of faculty support varied based on students' prior online learning experience and their sense of self-efficacy related to the course's collaboration activities. In their meta-analysis of recent research into social presence, Richardson et al. (2017) also suggested that factors related to the online and hybrid course setting including course length, discipline area, and size of the course had a moderating effect on the correlation between interaction and satisfaction. These factors were all significantly related to student motivation within the course (Richardson et al., 2017).

Overall, these studies suggest students' levels of experience and interest with a course subject and format impacted their interaction. The results also suggest the role of cognitive, social, and teaching presences may be individualized for students and be based on the subject matter taught, motivations of students in taking a course in a different format, and the experience of students with that format, thereby requiring faculty to understand students' experiences and requirements early in the learning process.

Based on this existing literature describing the relationship between interaction, satisfaction, and student motivation on student success, this study seeks to extend these existing studies in the design and delivery of graduate, seminar-style blended courses using the methods detailed in the next section.

Methods

Data were collected from 11 courses within the same professional graduate degree program at a private research university from spring 2016 through spring 2018. The courses varied in size, instructor, topic area, and activities/tools used; however, all courses followed the same blended format and were supported and facilitated by the same instructional designers. The course topics included: introduction to higher education, college student development theories, teaching and learning in higher education, coaching and developing leadership, budgeting and finance in higher education, and community colleges. Some courses were iterations of the same course from one year to the next with the same faculty teaching the courses. Key context factors of the 11 courses are described in Table 1. Courses are presented in chronological order of when they were taught.

Table 1
Background and Context of Blended Format Courses Examined

<i>Course</i>	<i>Quarter</i>	<i># of Instructors</i>	<i># of TAs</i>	<i>In-Person Hours</i>	<i>Online Sync Hours</i>	<i># of Students</i>
Course 1	SP16	1	-	20	8.5	17
Course 2	SU16	1	1	18	10	16
Course 3	FA16	1	-	18	10	12
Course 4	WI16	2	-	15	12	41
Course 5	SP17	2	-	16	12	13
Course 6	SP17	1	1	16	10.5	28
Course 7	SU17	1	1	16	10	15
Course 8	SU17	1	-	16	12	13
Course 9	FA17	1	-	16	12	10
Course 10	SP18	1	-	16	12	18
Course 11	SP18	1	-	16	12	7

After each blended format course, students were asked to provide feedback using a survey instrument based on a survey developed and validated by Vaughan, Cleveland-Innes, and Garrison (2013) for evaluating the CoI framework. The survey asked students to rate each course on how it compared to other courses they had taken based on Likert-scale questions. More specifically, the survey asked students to rate their amount and quality of interactions with peers and instructors and their overall satisfaction. Students were also asked to rate the helpfulness of learning activities, course formats, and tools utilized within each course toward their overall learning. These questions were all designed to assess the students' perceptions of the teaching, social, and content presences described in the CoI framework (Garrison, Anderson & Archer, 2000). The survey had an average 64 percent response rate across all courses, but varied greatly from course to course with the lowest response rate at 38 percent for course five and the highest response rate at 92 percent for course three. Because of this variation and the overall small population and sample sizes represented, results fall within a margin of error ranging from 9 percent to 36 percent at a 95 percent confidence level. This is a limitation of this study as no statistically significant results or correlations can be derived from the survey results. A similar study with greater statistical validity could result in more generalizability of the findings to other contexts; however, as a case study in one attempt at blended learning in graduate, seminar-style courses, the results can still be reported and interpreted qualitatively to get a richer understanding into the student experience within the program as it relates to the format of the courses, motivation to pursue these courses, and their perceptions of the development of a community of inquiry.

To enhance the qualitative understanding of blended learning in this context, course instructors and teacher assistants (TAs) were solicited for feedback during an informal interview at the end of each online course session and, in most cases, at the end of the course completion.

With the focus again on the CoI framework, instructors were asked specifically to reflect on how students engaged within the class sessions with their peers, with them as instructors, and with the content. These thoughts were recorded and used to inform course design and implementation of improvements as well as get a better sense of the instructors' impressions on their students' satisfaction with the course and perceptions of student learning and interaction. All but one courses' faculty participated in informal interviews regarding their experience with the course, the design process, and their suggestions for improvements. The results from the student surveys and instructor interviews are reported in detail in the following section.

Results

Results from the surveys provided the bulk of the understanding for this study but were reinforced by feedback from instructors and the instructional designer. The results reported here are organized around three themes: overall satisfaction and interaction, course format and activities, and student motivation.

Overall Satisfaction and Interaction

Given the main foci of this study around interaction and satisfaction as key indicators of success, one of the main factors examined was student reported quantity (amount) and quality of interaction with both peers and instructors as well as overall satisfaction for each course in this study. Figure 2 shows the averages from the student survey on these three factors.

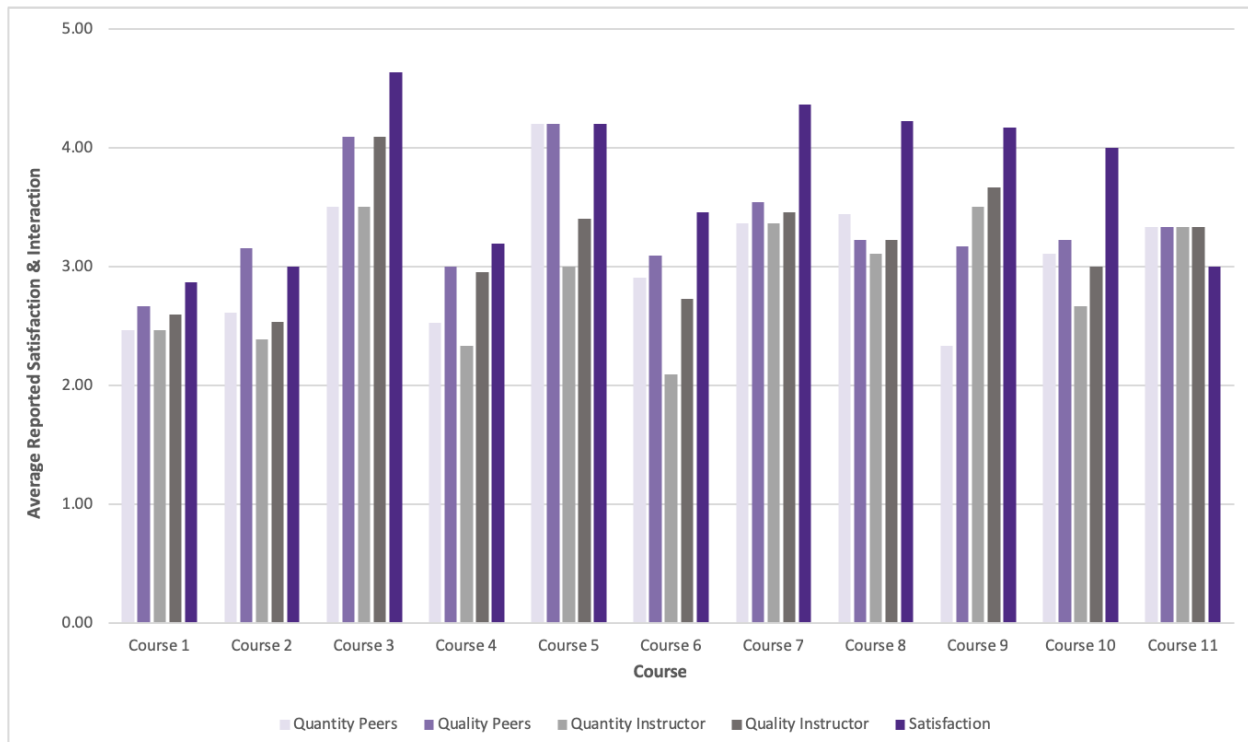


Figure 2. Average reported quantity/quality of interaction and satisfaction.

In this graph, averages were calculated from a Likert scale from 1 to 5, where 5 indicates higher/better interaction and 1 indicates lower/worse interaction than in other courses. Satisfaction was also based on a Likert scale from 5 (extremely satisfied) to 1 (extremely dissatisfied). In

chronological order of when it was offered, this graph shows the quantity and quality of interaction with peers in shades of light purple, while the quantity and quality of interaction with instructors in shades of gray. The overall satisfaction is reported for each course in dark purple. Any bar above 3.0 would indicate an average overall rating of “high” or “very high” quantity/quality of interaction and “satisfied” or “very satisfied” with the overall course. This overall view shows fairly wide variance across courses in both interaction and satisfaction, but individual factors reported next provide more nuance.

Class Size. While many variables remained consistent across all 11 courses examined, including the format, instructional time, redesign process, and demographics of students taking the courses, one factor that changed regularly was the class size. To understand this potential impact on the student ratings of interaction and satisfaction, data were further explained by a comparison between quality of interactions with peers and instructors and class size, as shown in Figure 3, which organizes the data by class size (indicated by the line) from smallest to largest.

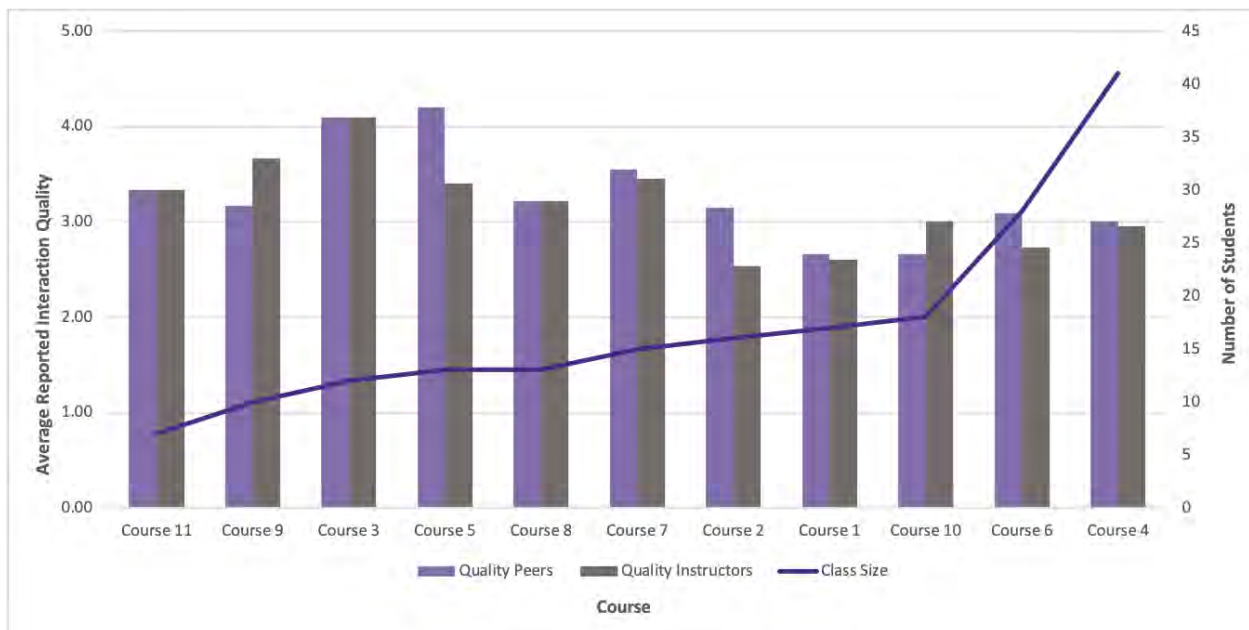


Figure 3. Average rated quality of interaction with peers and instructors for each course, compared with class size (organized by class size from smallest to largest).

Figure 3 shows a slight inverse in the relationship between reported quality of interaction (indicated by the bars) between both peers and instructors and the class size (indicated by the line). As the class size increased toward the right side of the graph, quality of interaction with both peers and instructors decreased.

TAs and Multiple Instructors. Another factor which varied across many of the courses was the size and composition of the instructional team. Three courses had a T) present for all class sessions and participating in the online course Learning Management System and two of the courses had two instructors instead of only one. While virtually no variation was seen between these courses with student interaction, some variation was observed for student perceptions of the quantity and quality of interaction with instructors as shown in Figure 4.

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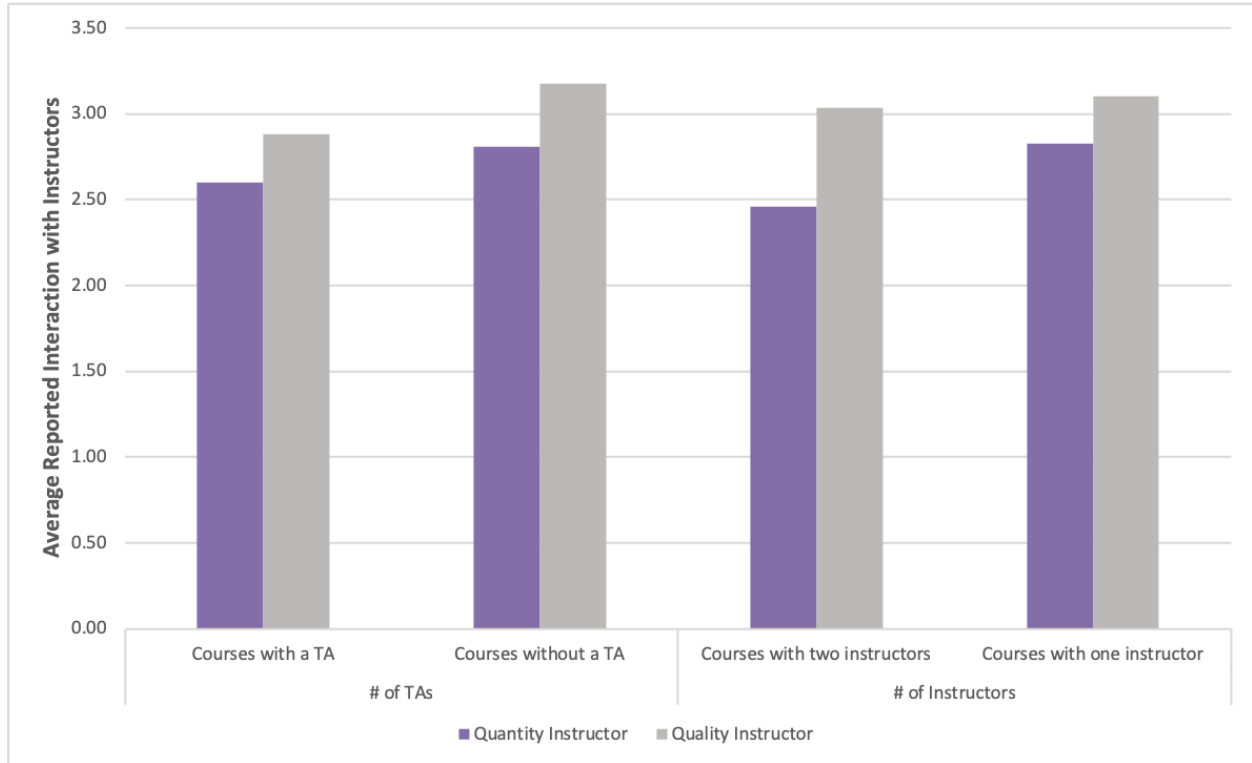


Figure 4. Average rated quantity and quality of interaction instructors based on whether a course had a TA (left) or multiple instructors (right).

As Figure 4 shows, there was a slight increase in both the quantity and quality of interactions for courses which did not have a TA. There was also a slight increase in the quantity of interactions with courses which had only one instructor, but virtually no difference in quality of interaction.

Course Format and Activities

Another factor that varied across the courses examined was the amount of time devoted to in-person versus online instruction. Figure 5 shows average student ratings of helpfulness to their learning for the different course formats (i.e., in-person or online) on a Likert scale from 5 (very helpful) to 1 (very unhelpful).

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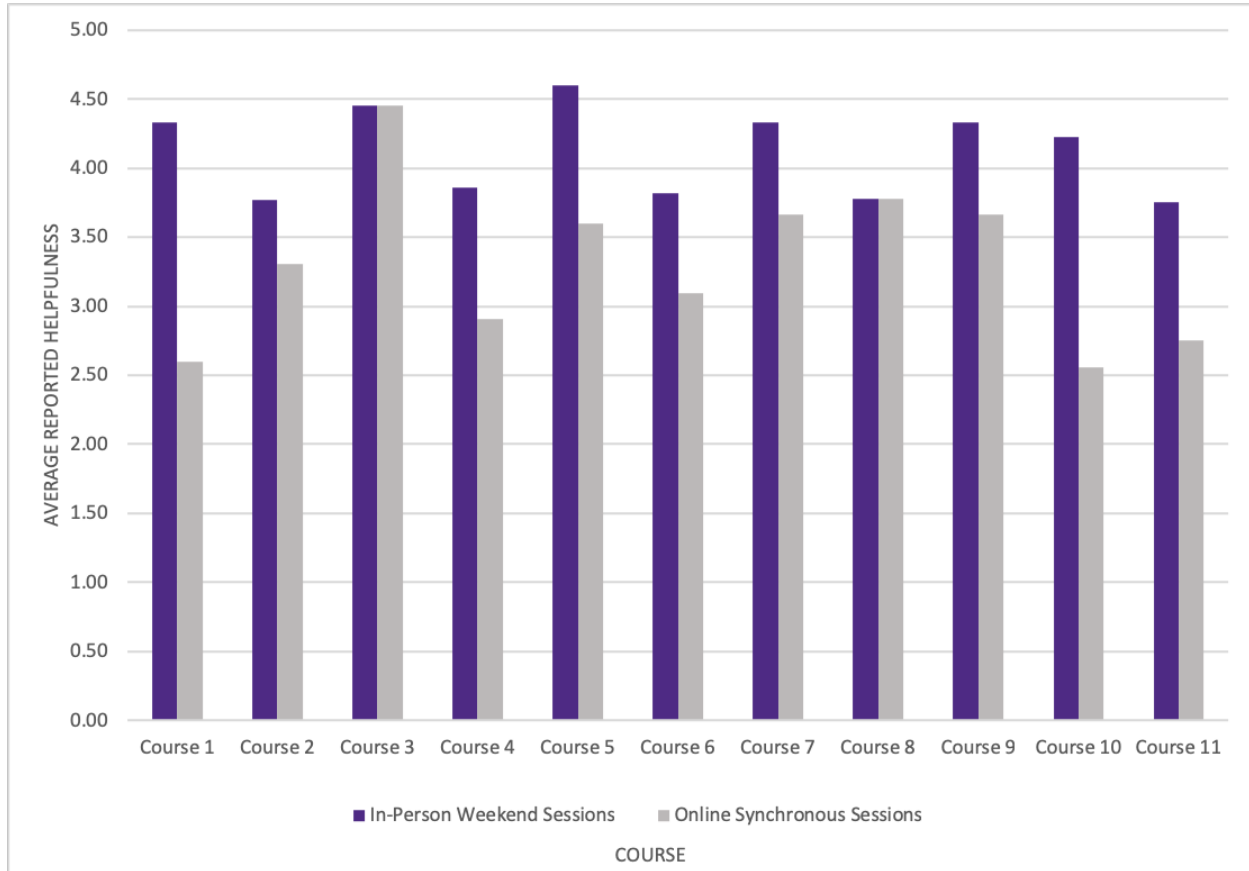


Figure 5. Average rated helpfulness of course formats by course. Helpfulness was rated on a 5-point scale, with 1 being “Not at all helpful” and a 5 being “Extremely helpful”.

Courses offered earlier (courses one through three), all had a higher proportion of in-person instructional time (average 18.66 hours in-person and 9.50 hours online) as compared to courses starting with Course 4 through Course 11 (average 15.88 hours in-person and 11.56 hours online).

Most courses also used a variety of tools and activities to support their instruction, and particularly student interaction. Using the same scale for helpfulness to their learning, Figure 6 shows reported feedback on tools and activities. Only tools and activities which were used in at least two different courses with different instructors were included. This was done to minimize the impact of course-specific variables, such as *how* tools or activities were incorporated, class size, and how instructor(s) provided feedback.

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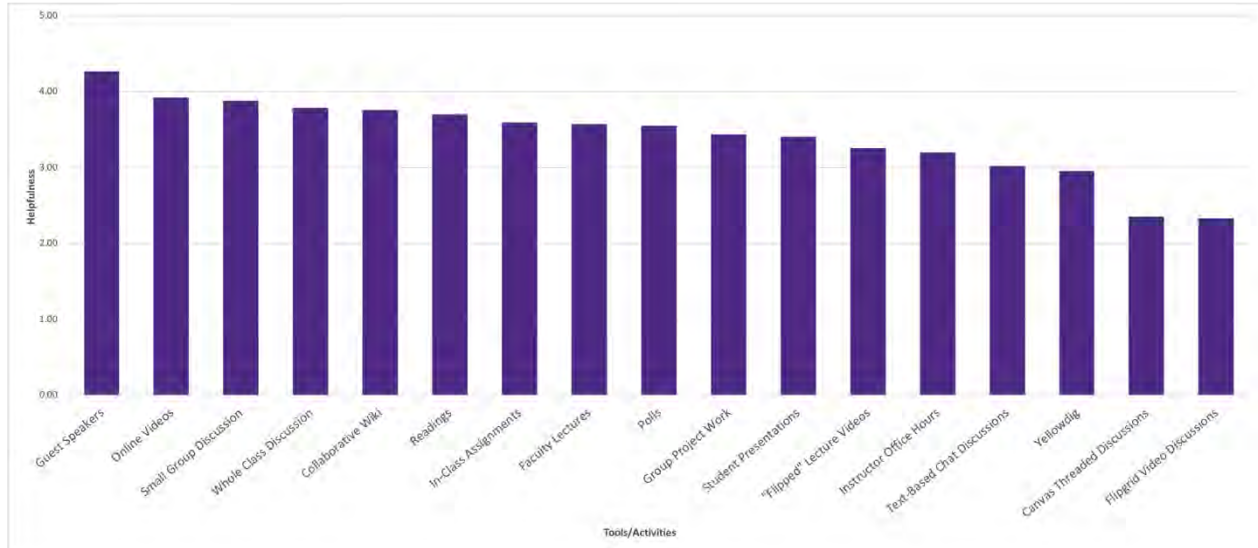


Figure 6. Helpfulness rating of all activities and tools used in blended format courses ranked in descending order. Note that not all activities/tools were used in every course and activities/tools used in only one course were omitted.

While Figure 6 is organized in descending order from average rated helpfulness, an average of three would indicate an average response of “helpful” or better. As such only a few activities—namely Yellowdig (a social-media style discussion board tool), Flipgrid video discussions, and Canvas Threaded Discussions—were rated as not helpful on average. This graph shows that all of the most highly rated tools and activities were focused around synchronous class sessions and included guest speakers, online videos, small group, and whole-class discussion.

Students also provided qualitative feedback on tools and activities used in courses. Most importantly, a large number of students discussed the importance of small group discussions. One student, for example, said: "I enjoyed the smaller breakout sessions (virtual or live) as they allowed for in-depth conversations and examination of the content/issues from the course." The instructional designers reiterated this point as well, noting that the methods for implementing different tools and activities such as how Yellowdig was used differently within separate courses had an impact on students’ interaction with the material, the instructors, and each other.

Student Motivation

Finally, to examine the question of student motivations for participating in a blended format course and their satisfaction, researchers asked students to provide the reasons they chose to take the course in the blended format. Students were given the option to select any number of choices from a list of seven choices or a freeform “other” option. These results as related to overall course satisfaction are shown in Figure 7.

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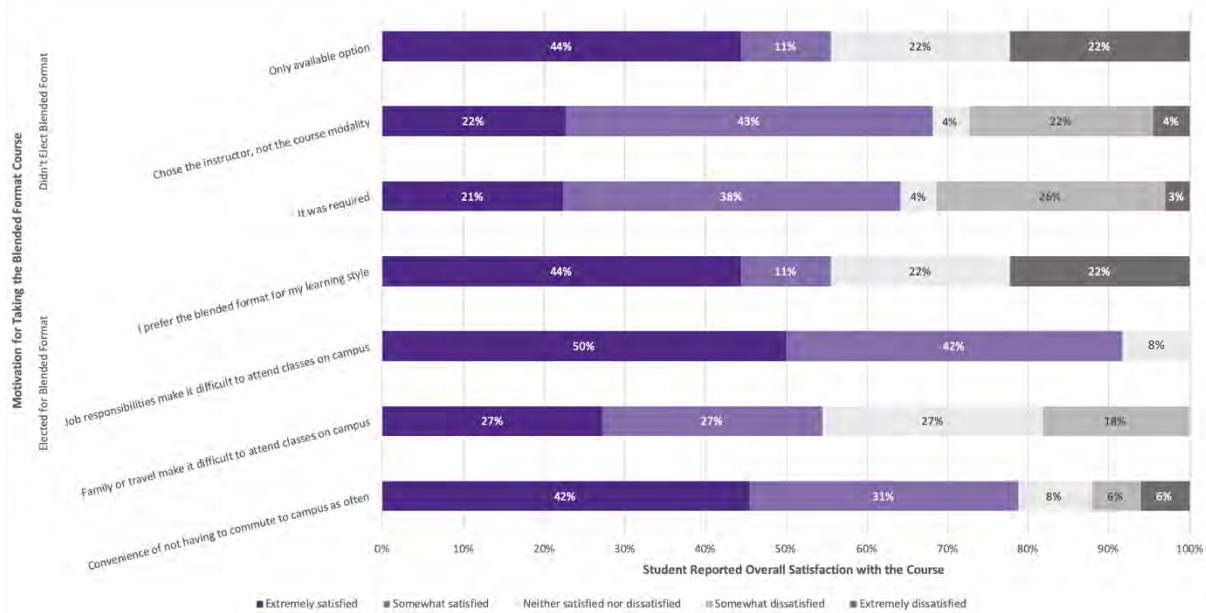


Figure 7. Student motivations for taking a course compared to their overall satisfaction with that course. Motivations are divided into two categories for either elected or didn't elect to take the blended format.

Figure 7 shows the data further subdivided by whether the answer indicated the student elected to take the course in a blended format or were required to take that format. Three of the seven choices were considered options that students took the course *despite* the blended format while the remaining four were considered reasons that students *elected for* the blended format. For example, if students responded with “It was required” or “Only available option,” then they were grouped together on the top half of the graph for *didn't* elect for the blended format. Students who were grouped together because they *did* elect to take the blended format included those who answered “I prefer the blended format for my learning style” and “Family or travel make it difficult to attend classes on campus.” For each reason indicated for taking the blended format course, the overall satisfaction as a Likert scale is reported along the horizontal bar from “Extremely satisfied” (5) on the left to “Extremely dissatisfied” (1) on the right.

The results of this study around overall satisfaction, course format and activities, and student motivation are discussed in detail in the following section.

Discussion

The objective of this study was to focus on assessing student satisfaction and interaction as key determinants of student success. Ultimately, the process of determining any clear relationship between different factors in a setting as complex as education and interaction or satisfaction is fraught with difficulty. It is impossible in this study, for example, to understand the likely outsized impact on the quality and quantity of interaction imposed by different faculty members, different groups of individual students, or the university environment within which these classes were situated. However, examining the data does provide some insight into factors which potentially impacted the interaction and satisfaction of students within graduate, seminar-style

courses, a type of course that was not distinguished or reported on in most literature of blended learning. The discussion of the results is organized around the same themes as the data results: overall satisfaction and interaction, course format and activities, and student motivation.

Overall Satisfaction and Interaction

Based on the data examined for this study, class size was the biggest factor relating to student interaction. Quality of student and instructor interaction was higher in courses that had fewer than 15 students (Courses 3, 5, 6, 7, 9, and 11). However, while smaller class sizes, particularly those with no more than 15 students had higher quality interaction, little difference was seen in this study between classes with 16 students, 28 students, or even 41 students. Little prior research has examined the impact of class size on blended courses and what has been done to study both traditional and online higher education courses find mixed results. Some research, for example, suggests that modest increases (10%) have negligible effect on student outcomes (Bettinger et al., 2017) while others suggest small classes (under 15) see increases in peer interaction over medium (15–30) and large (>30) classes (Arslanyilmaz et al., 2016). It is also likely that smaller classes would increase students' ability to form a community of inquiry through increased meaningful interaction with peers and instructors. The results from this study appear to be consistent with these previous findings in that smaller class sizes saw increased interaction and satisfaction, but additional research would be warranted to understand the variance in larger class sizes on interaction and satisfaction.

While the survey data was not a large enough sample size determine statistical significance, the variation in quantity and quality of interaction with instructors based on the presence of a TA was another interesting finding. Little to no prior research has investigated the impact of a TA on the CoI framework, but the results of this study suggest that a TA *detracts* from teacher presence within this style of blended-format course. One possible explanation for this effect supported by open-ended survey results and the interviews with faculty and TAs is that the TA takes on some of the responsibility of interacting with students online and answering questions by phone or email. On the face, this might improve overall communication with students; however, based on the results from this study, students appear to not see interactions with TAs as synonymous with those of instructors. In this way, adding a TA causes the instructor to appear more distant to students within the course and therefore detracts from teaching presence. However, the quality of interaction was increased slightly within this study when there were multiple instructors in a course. Given the existing lack of research in this area, more research is needed to explore the impact of TAs and multiple instructors on teaching presence within the CoI framework across a greater variety of programs and course formats.

Course Format and Activities

As for program format, students rated in-person weekend sessions highly across all courses for helpfulness to their overall learning. This supports previous CoI framework research into the advantages of blended learning over fully online courses (Garrison, 2017). However, exactly how much time is devoted to in-person class sessions before seeing an impact on interaction is unclear. Based on Figure 5, little variation in reported helpfulness exists across courses even though the number of hours spent in-person decreased over time (see Table 1). There was, therefore, no apparent relationship between the amount of time spent in class online versus in-person on student reported interaction or satisfaction, but the variation in instructional hours in-person and online across the 11 courses examined was minimal and the sample size overall was not large enough to

perform any more robust analysis. More research could help to determine if there is an “ideal blend” of instructional time between in-person and online class sessions to promote interaction and boost satisfaction in graduate seminar-style courses.

The data suggest synchronous online discussions had a greater impact than other learning activities. Guest speakers, small group discussions, and whole-class discussions—all online synchronous activities—were rated three of the four most helpful tools/activities. Asynchronous discussion boards regardless of the tool used were not only rated as the three least helpful tools but were also the only three that were rated as unhelpful on average. This finding is in contrast to existing research on the CoI framework related to online and blended learning, which supports the use of online discussion boards for promoting social and cognitive presence and student interaction (Akyol & Garrison, 2008, 2011; Swan, Garrison & Richardson, 2009). One possible explanation suggested by some of the students in the open-ended survey results is how the discussion-based nature of the graduate, seminar-style courses in this study impacted both the synchronous and asynchronous discussions. Students used to graduate seminar-style courses in-person may be more likely to engage in similar ways in online sessions. The courses in this study also all utilized synchronous online class sessions, which generally focused heavily on promoting interaction during that time. Students in other courses—whether fully online or blended but without required synchronous online class sessions—likely rely more heavily on asynchronous discussion board formats for their interaction as their primary method of communication with peers and instructors, thus making those forms of communication more important for peer and instructor interaction in the CoI framework.

Closer examination of the discussion board activities also helped to offer a more nuanced understanding of student-reported helpfulness. For example, Yellowdig, a social media style discussion tool, was used in both Course 2 and Course 3, but students in Course 3 rated the tool as more helpful (across both iterations). The two important differences in implementation were: (1) in Course 3, the instructor referenced the Yellowdig board during each synchronous class session, often having students share their favorite takeaways from the Yellowdig discussion, and (2) the directions for how students should participate in the discussion were more explicit. The benefit of integrating the asynchronous discussion into synchronous class sessions mirrors closely the findings of previous CoI research on blended learning, which shows that *how* tools are used (particularly across different course formats) is more important than *which* tools are used (Picciano & Dziuban, 2007; Vaughan, Cleveland-Innes, & Garrison, 2013).

Overall, however, this study’s results suggest that the traditional activities conducted during in-person class sessions had the greatest impact on student interaction and overall satisfaction with the course, even when these activities were conducted during synchronous online sessions. The course format took advantage of synchronous class sessions to promote interaction rather than relying on asynchronous tools such as threaded discussion boards for student interaction. While this finding is not following directly with the most common findings from previous CoI research, the result is still closely tied to the core principles of the CoI framework, namely that the focus is on providing opportunity for students to have meaningful interaction with their peers and instructors (Garrison, Anderson, & Archer, 2001).

The data also suggest a modest increase in satisfaction over time. Though there is no definite reason for this increase in satisfaction, reports from faculty and TA interviews suggest this is likely the result of improved guidance provided by instructional designers based on experiences from previous courses. This increase may also relate to previous literature, which suggests the

importance of students' increased familiarity with taking courses in a blended format on their ability to engage and participate in those courses (Lee et al., 2011).

Student Motivation

Finally, concerning students' motivations for taking a course in a blended format, there is no strong connection between a desire to take a course in the blended format and student satisfaction with that course. For example, students who answered "I prefer the blended format for my learning style" also had some of the highest percentages of dissatisfaction with the course. Alternatively, students who indicated they "chose the instructor, not the course modality" had some of the highest overall satisfaction rates with courses. This finding would seem to contradict earlier findings from Arbough et al. (2010) and Oustz (2006) who found positive correlations between students' interest in taking the course and their achievement, but the findings do suggest that some motivational factors may have a stronger impact than others. For example, while they might not have preferred the blended format, students who wanted to take a course based on the instructor despite it being in a blended format still learned a lot from that course. In addition, students who indicated that "job responsibilities make it difficult to attend classes on campus" and "convenience of not having to commute to campus as often" were their reasons for taking courses in a blended format had the highest overall satisfaction with the courses. This finding makes sense when considered from the perspective of self-determination theory. Since students will be more satisfied if the course or program aligns to their personal motivations such as flexibility, it makes sense that students who preferred the blended format because it fit into their schedule had the highest overall satisfaction (Deci & Ryan, 2002). As such, these practical considerations may have the strongest overall impact on student motivations and thus interaction within those courses. This finding strongly supports the common conception of online and blended providing greater access to nontraditional learners such as those who are working full time, have children, or do not live close to a campus with good programs (Ubell, 2017).

Limitations

Of course, this study has some limitations. Primarily, the study is of a limited scope and small sample size. This creates a limitation on the ability to determine statistical significance for any of the specific factors discussed. As a case study involving one institution and one department offering graduate, seminar-style courses in a blended format, it is also limited in its generalizability. While the qualitative understandings derived from this study can be instructive in helping other programs and courses decide on what is important in creating or improving their graduate, seminar-style, blended format course offerings, none of the findings from this study can be considered statistically significant of a broader trend. Further research is also needed to explore the influence of the instructors on the learning environment, the types of students taking blended format courses, and the impact different types of asynchronous tools and activities can have on interaction. These would be next steps to research.

Conclusions

Ultimately though, the findings from this study suggest a number of implications for understanding the CoI and student motivation in blended learning courses. When creating graduate seminar-style courses in a blended format, class size has an outsized impact on student interaction and satisfaction with an optimal size at fewer than 16 students. Courses with greater than 16 students begin to have an impact on students' ability to participate meaningfully in synchronous discussions and for the instructor to manage class dynamics through synchronous online communication tools such as Adobe Connect or Zoom. While this is not a new finding in the field of blended learning, the outsized impact class size has for graduate, seminar-style courses in a blended format specifically has not previously been established. Second, a TA seems to have a negative impact on student perceptions of teacher presence. Given this, it is important to be careful when deciding to use a TA and make sure that the instructor remains engaged and present within the course online when using a TA. Instead of using a TA, having a co-instructor for larger class sizes might be a better choice to promote higher quality instructor presence. This is an interesting, new finding related to the CoI framework and warrants additional study to determine if this trend holds across other formats and types of courses. Third, it is important to provide opportunities for students to engage with peers and instructors in real-time, both in-person and online. Synchronous forms of communication and discussion are the most highly rated by students for supporting their learning and for their overall satisfaction within courses. This is also related to the optimal class size in that these opportunities for synchronous communication are supported by smaller classes. When the focus is on real-time interaction, discussion boards and other asynchronous communication may be less important than in other types of online class settings. This finding represents an important departure from more traditional online course formats which rely heavily on asynchronous discussion boards to promote student and teacher interaction but remains consistent with the principles of the CoI framework. As such, it suggests an expansion of our understand for how to develop a community of inquiry in blended courses based on the format and style of the course. Fourth, blended format courses should be adopted based on genuine needs and desires of students so that students are motivated to take the courses in a blended format because of added access or convenience over an in-person alternative. In general, students who preferred the format because of convenience factors such as difficulty traveling to campus or busy schedules for work and family preferred the blended format over any other reason for taking a blended format course, including students who reported preferring the format for their learning style. This, then, represents an important confirmation that self-determination theory holds consistent for students when choosing to take blended-format, graduate, seminar-style courses.

Ultimately, this case study sought to further understand best practices for implementing blended format, seminar-style courses in a professional graduate degree program by looking specifically at student interaction, satisfaction, and motivation. These findings do suggest a number of considerations which may be unique to graduate, seminar-style courses and should be studied in other context and with larger sample sizes to determine if they remain consistent, but they also suggest that given the right conditions, format, and motivations, blended learning can be an effective delivery method for graduate, seminar-style courses.

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