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## Student perceptions of required student-to-student interactions in online courses

### Abstract

This multi-institutional study of undergraduate and graduate students enrolled in online degree programs explored student perceptions of required student-to-student interactions. Using a semi-structured interview methodology, thirty three students participated in the study. While all of the students had experience with the required discussion board interactions of posting and responding, a majority of the students reported experience with other types of required student-to-student interactions including group projects, group presentations, peer reviews, and, for a few, discussions within the required synchronous sessions. The findings indicate that while most students value the concept of peer-to-peer interaction in online courses, many found the required assignments lacking in authenticity and not a good use of their time. Some students reported satisfaction with one or more of the requirements such as small group assignments when time was allowed for coordination, small group discussions, and selected discussion board posts. The students valued the interactions most when those interactions were relevant to their careers.

These findings encourage taking the demographic realities of students studying online into consideration when incorporating student-to-student interactions into courses. Many have family and other obligations, so they are particularly sensitive to work that appears to be trivial or unnecessary. Hence, learning elements such as peer-to-peer interactions should be incorporated into courses intentionally and with purpose so that the interactions do not appear to be busy-work or checking an interaction box.

**Keywords:** online learning, student interactions, authenticity, online programs

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### Introduction

Though slower than in years past, enrollments in online courses continue to grow (Seaman et al., 2018). On-campus enrollments, however, have begun to recede at many institutions, especially in the Northeast and Midwest. As demographic shifts continue to impact colleges and universities, many will face significant on-campus enrollment declines by the mid-2020s (Grawe, 2018). Consequently, many institutions are focusing increasingly more on teaching online.

The composition of online students is changing from a historical base of largely adult, part-time, students (Dabbagh, 2007) to a blend of traditional age undergraduate and graduate students along with adult non-traditional students (Lederman, 2018). A key factor associated with learning and satisfaction is engagement (Kahu, 2013; Kuh, 2001, 2003) and this includes engagement in online modalities (Meyer, 2014; Sher, 2009).

Student engagement is a multi-faceted issue that can include an array of interactions, including peer-to-peer interactions among students, student-faculty interactions, interactions between students and outside experts, and so on. Student satisfaction with their learning experiences is a key component in philanthropic behavior of alumni to the institutions from which they graduate (Gaier, 2005; Monks, 2003). While exploring factors influencing online student satisfaction, the authors of this article became aware of an unexpected discord in the literature. Some studies suggest that student-to-student interaction as a form of engagement in online programs is important for student satisfaction, while other studies suggested that it is not significant.

For example, in their three-year study of online student satisfaction, Michele T. Cole et al. (2014) found that limited interaction, including between students and other students, was a leading factor of student dissatisfaction. In contrast, student-to-student

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interaction did not emerge as significant to online student satisfaction in a study of undergraduate and graduate students by Yu-Chun Kuo et al. (2013).

This multi-institutional qualitative study sheds further light on the perceptions of the required peer-to-peer interaction in online courses from the perspective of students in online degree programs.

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## Related literature

George Lorenzo (2012), based on a review of the literature on factors influencing student satisfaction and encouraging student retention in online courses, suggested that there may be a type of learner, who he refers to as “the independent, self-directed learner” (p. 52), who prefers not to be burdened by required student-to-student interactions. Such learners may not find it “necessary, nor [have] the desire to engage in fully online classes with other students” (p. 52).

Because most online courses are asynchronous, and the students study when and where they can, ensuring that students are properly engaged in online courses presents a challenge to online instructors (Kebritchi et al., 2017). One way that instructors have tried to overcome physical and affective distance in online courses is by requiring students to interact with one another as part of the curriculum (Dixon, 2010). Unfortunately, the research is inconclusive on the benefit of such a requirement for student satisfaction.

Gary Moore et al. (2016) seriously questioned the assumption that student-to-student interactions in online courses are necessary. Their study was conducted over a three-year period of time and their sample was drawn from one department at a state university. They found that, overall, graduate students in their study didn’t expect nor value the required student-to-student interactions. Furthermore, discussion forums were criticized by study participants as a poor use of time. Similarly, Janet Buelow et al. (2018) explored ways to enhance student engagement online. A quarter of the students in their study reported they were dissatisfied with online discussions and noted they were “busywork” and “lacked challenge or practical application” (p. 326). In contrast, Florence Martin and Doris Bollinger (2018), using a survey instrument, found that while student-to-instructor engagement was most important to online students, aspects of student-to-student engagement were also deemed important by many of the students. These included an opportunity for students to virtually introduce themselves through online ice breaker activities and working collaboratively online to help each other complete assignments. They noted that “[r]eal-world, authentic, and meaningful assignments kept students engaged in their learning process” (p. 213).

Indeed, based on an extensive review of the literature on authentic learning, Audrey Rule (2006) noted four related themes including “real-world problems” and an approach to exploration that requires “open-ended inquiry” between learners that is personally important to them. Similarly, in a study of students

completing an online two-course requirement as part of a Master’s of Reading program, Elizabeth Swaggerty and Amy Broemmel (2017) found that students noted as useful peer-to-peer interactions such as peer review of papers as well as discussion forums that allowed students to connect with each other in meaningful ways. In a multi-country study on student satisfaction and learning in online courses, “course design and the learning content” were found to be most significant (Barbera et al., 2013, p. 232) to student satisfaction.

Considering the demographics of today’s online students, including that the average age of undergraduate students studying online is 32, and 84% are employed (Friedman, 2017), and that student satisfaction is an important prerequisite to retention in online courses (Bornschlegl & Cashman, 2019; Gaytan, 2015), it is important to better understand the factors that contribute to satisfaction on the part of students in online programs. In particular, given the mixed results of earlier studies on peer-to-peer interactions online, further exploration from the perspective of students on required student-to-student interactions in online courses is timely.

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## The study

To shed further light on required student-to-student interactions in online courses, this study was designed as a multi-institutional exploratory study using students enrolled in online degree programs through guided interviews. Unlike other studies that tend to focus on undergraduate or graduate students in online courses, this study included participants in undergraduate as well as graduate degree programs. The study’s aim was to deepen the understanding of the factors influencing student perceptions of required student-to-student interactions to help facilitate satisfying educational experiences for students in online degree programs. In this way, the study was also intended to contribute to the literature focusing on ways to strengthen institutional affinity on the part of students in online programs. The study’s guiding questions were:

- (1) How do students enrolled in online degree programs perceive the required student-to-student interactions?
- (2) What are the implications of findings for administrators, instructors, and instructional designers?

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## Method

### Participants

Students (17 women and 16 men) enrolled in online degree programs (1 doctoral student, 24 master’s degree students, 8 baccalaureate degree students) at 4 universities (3 public research-oriented and 1 private denominational institution), across the USA were invited to participate in this study. An email notice

describing the study was sent by the coordinators of online programs at the respective participating institutions to students enrolled in their online degree programs. The email included a way to contact one of the co-authors if they were interested in participating in the study. One participant had recently completed their online program and was due to graduate; all others were at various stages of matriculation from the first courses in the program to near graduation. A variety of online programs were represented. Participation was voluntary.

**Procedures**

This was a qualitative study. A semi-structured interview methodology was used to collect data. Upon confirming their interest in participating in the study, the participants were sent the study’s Consent Form and a set of semi-structured interview questions. All interviews were conducted in real-time via the Zoom online audio-conferencing system. Originally envisioned as online focus groups – due to scheduling challenges – 14 participants were interviewed alone, and the remaining 19 participants were interviewed as part of 2–3 person groups with an opportunity provided to respond to each question. The interviews lasted between 15 and 40 minutes.

**Results**

For the purpose of this paper, the terms “discussion boards” and “discussion forums” were used interchangeably by the study participants. All 33 (100%) of the students experienced required discussion board assignments. In addition, 22 participants noted that they also had experience with other types of required student-to-student interactions. These included group projects (e.g., papers, presentations, simulations), peer reviews, and in a few instances, discussion as part of synchronous class sessions. Generic themes and sub-themes are reported in this section. For ease of readership, Table 1 outlines the main themes.

**Perceptions of any required student-to-student interactions in their online courses**

Over one-half of the students in the sample, 19 (58%), reported that they had mixed experiences with the required student-to-student interactions; 10 (30%) participants found the required interactions useful; 4 (12%) found them not useful.

**Authentic interactions between students**

In terms of mixed experiences, the students reported dissatisfaction with assignments that they perceived as lacking substance, wasting time, being poorly structured, and – as in the case of group projects – being difficult to coordinate or where students were not responsive. The students found the required interactions useful, including discussion boards, when the discussions were authentic, when instructors provided input through the discussion boards, and when the students came away with a sense that they had learned something from the interactions.

For those who found the required student-to-student interactions not useful, they often said that the discussion forums were “a waste of time” and “not really a discussion,” and expressed a general dislike of any type of required student-to-student interactions.

In terms of mixed experiences, one student put it this way:

Initially, that’s a lot of reading ... and sometimes it seems [the other students] are agreeing with what the person said or repeating what was said. On the other hand, you get different perspectives, some students relate the topic to their career, get insights, or provide a link to something that’s interesting.

Underscoring the theme of authentic communication, a student said that she “hated them all” referring

**Table 1. Main themes described in the results section**

Authentic interactions between students
Instructor’s role in fair and useful student-to-student interactions
Encouraging discussion
Structure of discussion boards
Purpose of discussion boards
Instructor involvement with the boards
Relevance of the discussion to the real-world and to helping each other
Flexibility of the peer-to-peer interaction requirement
Accountability between students
Opportunity to connect meaningfully with other students
Nature of the course

Source: authors’ own work.

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to the required student-to-student interactions, but noted the following exception:

In one course, [we] did group exercises so people had different roles and had to solve different problems ... and that was useful and interesting; in other courses not useful, not interesting, just another thing to do to get your grade to pass your course.

Those who found the interactions useful included one student who said, "Much of it depends upon engagement of the student and I feel fortunate to be traveling along this path with an engaged group [who are] as excited as I am about the coursework." Another student said, "The student-to-student interaction was extremely helpful to me. I learned as much from other students as I did from faculty and the rest of the class materials." Further on in the interview, this student added, "Discussion boards are useful as long as they ... are about the course materials in a substantive way."

## **Instructor's role in fair and useful student-to-student interactions**

Some students commented on the role of instructor involvement in discussion boards. One student noted, "I wished in some courses the professor was participating in the discussion board to nudge people, even to help if the students were drifting." In contrast, another student said, "The student contributions are all very good. I think it is helpful when the professors share responsive posts. That has varied by course in terms of how often the professor posts and how extensive are the professor's posts."

Some students expressed concern about the role of discussion boards in their grades, especially when expectations of engaging in discussion boards was not made explicit by the instructor. One student was concerned about the fairness of using participation in discussion boards when assigning grades and asked us to pass on to instructors "to stick with their expectations on the syllabus and if they modify expectations to let students know of the changes." Similarly, another mentioned that "every professor's grading was different in terms of the discussion boards and not hearing back from an instructor after a week or two [was] a great concern. Professors should talk about their responsiveness [time they will take] to respond to the discussion board."

Perceptions specific to non-discussion board assignments will be addressed later in the results section.

## **Perceptions specific to discussion board requirements**

All students in this study experienced some form of required discussion board or discussion forum post/response in their online programs. In terms of their perceptions of that requirement, 16 (48%) participants indicated that the usefulness of the requirement depended on a number of factors; 7 (21%) found them

not useful; 5 (15%) found them useful; and 5 (15%) indicated they were useful provided the execution of the discussion boards met certain criteria, as described by the participants. The factors that the participants indicated influenced their perceptions – one way or another – of the required discussion board interactions pertained to the themes of authenticity, other students, instructor presence, structure of the assignments, and applicability.

## **Encouraging discussion**

As one student stated, "it was robotic ... some people literally reply 'good comment' and that isn't useful, it's just noise to go through, it was overwhelming.... I saw benefit of thinking through response to the material, but otherwise not authentic, check-off list and impersonal." Another noted, "well, for most cases, it is a poor use of discussion boards. For example, there wasn't discussion, no back and forth."

A number of students referred to discussion boards as "a waste of time" unless the expectations were clearly stated by the instructors and consistently enforced. As one student put it, "Postings/forums aren't helpful unless there is a clear sense of expectations. Otherwise, 'waste of time' when checking off a box." Another student elaborating on this point noted:

When you have to respond to other students [discussion boards] can be a waste of time. When I had a class where we had to respond as a major part of the grade and the instructor had clearly stated guidelines, the discussion forum was excellent. When there are a lot of student and expectation is not there then responses are simple and [it is a] waste of time.

## **Structure of discussion boards**

Some students responded to the question about discussion boards by analyzing what went right or wrong with them. For example, one student indicated that she thought that the usefulness of a discussion forum depended on, "how the questions [were] structured, what [was] being asked, and to what detail each person [was] contributing, [was] important. Some classes I learned more from other students than [from] the instructor, but others not so much depending on the structure."

Another example of effective use of a discussion board assignment was shared by one participant who mentioned that, "they were broken up into small groups and the members rotated and that was nice so you could learn from different people, rather than a [discussion] board with 40 different threads..."

## **Purpose of discussion boards**

Another perspective provided by some students had to do with reconsidering the purpose of the forums. As one student expressed it, "with respect to any kind of learning, [the discussion boards were] not helpful for learning, but useful to know someone else was in the class." Another mentioned that:

There were some assignments when they were good – as when they were sharing specific industry knowledge – the ones that weren't beneficial were 'give us the 3 points from reading a, 4 from reading b, and served no benefit because they all wrote the same thing; not a natural conversation.

Focusing specifically on the discussion board requirements, a student said, "I think Discussion Boards are a good format but, as stated previously, [they] need to have more teeth to broaden the interaction and a bit more push/pull among students and conversation." Another student said, "If it is going to have discussion boards, make them small groups; large group posts/responses are not appropriate..."

### **Instructor involvement with the boards**

A number of students emphasized the impact that the instructors had – or didn't have – on their experience of the discussion boards. For example, one student said, "Instructor presence enriches the discussion through their guidance or resources they link to or post as the discussion progresses." As another student stated, "[it] was beneficial if the professor was engaged by reading and commenting, otherwise it was robotic." Another offered, "you don't always trust what students say, so it would be nice if the instructors would chime-in because sometimes students seem off, but other [students] seem more on and trustworthy." Another student indicated that she "wanted more interaction with the instructor to lead the board in a direction that would be more beneficial"; earlier in the interview this student had noted that she would "like to see conversations more about the differences between the text and the work world."

### **Relevance of the discussion to the real-world and to helping each other**

Furthermore, a student noted the best experience they had with discussion boards was an assignment when "it was truly a discussion and included learning different options of ways to do things. The discussion was personally relevant to your career or your area and showing how other people could use that, too." Also, two students indicated that most of the interaction on discussion boards in their courses were more informal "student lounge" type sharing of "practical" program/technical related questions and that emphasis was helpful.

Or, as another student said, "It is kind of nice because if you are missing the point, but if the response [to your post] is constructive, you can pick up what might have been missed."

A student in classes with two types of discussion boards – one on the lessons being covered and another to ask general questions – noted, "It [is] helpful to have interaction with some other people on their experiences with the class, e.g., tips to share, what they're learning. Otherwise, you might feel quite lonely without a discussion board assignment."

The participant added, "it's nice to have [the boards] separated because you don't want to be talk-

ing about your frustrations with [the topic] on the thread where you are supposed to be answering your homework questions."

### **Flexibility of peer-to-peer interaction requirement**

Work/life balance was also mentioned, as one participant put it, "One important thing for my schedule – and others – is 80% of work I do happens on weekends because I work during the week ... so interactions with students during [the] week is not practical." Similarly, another student mentioned that "most students have full-time jobs and it is good to have flexible ways of participating so everyone can contribute."

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### **Perceptions of required student-to-student interactions in addition to discussion boards**

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While all students engaged in discussion boards, 22 (67%) indicated that they had also engaged in one or more additional requirements such as peer review, group project, group presentation, and in the case of 3 students, required weekly synchronous sessions with embedded discussions. That includes 8 (36%) who found them useful; 4 (18%) who found them not useful; 5 (23%) with mixed experiences; and 5 (23%) that didn't comment on the additional required student interactions.

### **Accountability between students**

Examples of comments of those who did not find the group work useful included concerns on the work limiting the depth of exploration such as, "... group work not as useful as independent projects because ... students have different interests so they find common ground that is in between all interests but then that limits each person's ability to dive deeply into the topic to write about it"; lack of "responsiveness" on the part of other students, "there is always someone who doesn't do their part or doesn't turn it in on time", as well as concern about organizing the division of labor, "got through the group projects, it was a challenge, had to coordinate" with others. Yet another said, "I don't recommend group projects because people weren't responsive." That student also noted that time zone differences caused challenges with the group work.

### **Opportunity to connect meaningfully with other students**

The participants who found the required group work useful were mainly contrasting it with discussion boards that seemed "superficial". The comments included: "Group projects, where they met online, I enjoyed that, it worked pretty well as I got to know that group of individuals during the semester"; "small groups most valuable as you can see the change"; "gained ideas from each other, it mimicked small group work in a class with some dialogue but more

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interaction and learning from others.” Another participant said they especially favored peer review as it was “always useful because people can read your paper and see it in a different light and help enhance your paper and the instructors have good templates.”

## **Nature of the course**

A few found the experience of group work mixed, and the comments focused on this depended on the nature of the course. For example,

in one course they used chat with video, 4 students in a group giving constructive criticism or working on projects and for that [the discussion board] alone wouldn't have satisfied it, so using the video conferencing was crucial for that course; but it wouldn't have been needed for other courses.

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## **To require or not to require peer-to-peer interactions in online courses**

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A question asked of the participants pertained to whether or not they thought peer-to-peer interactions should be required. A number didn't address the question directly. Of those who commented, insights on the usefulness of required peer interactions in online courses focused on the opportunity for authentic engagement.

For example, one student said,

Some interaction would be good. The balance is the hard part because you have people doing different things and sometimes you can tell they don't want to do it [interact] that week. Require interaction that occurs a few times during the course so you can skip once in a while, otherwise students might post and not give it a lot of energy. Sometimes in a class, students raise their hands and other times they don't, perhaps because they are not feeling well that week, so why is it online they have to post every week?

Another indicated that student-to-student interaction was important but “not necessary to gain mastery of concepts; however, interacting with peers in corporate world [is expected so good experience], wouldn't mind if it wasn't required but would be missing an element of the 21<sup>st</sup> century world.” Yet, another student said student-to-student interaction was important “especially when they share their experiences or help each other better understand the material.” Creating a buddy system, assigning students to small groups for discussion, and rotating responsibilities among a small of group members as part of discussions, and including ways for students to connect so students don't feel too isolated, were also mentioned as ways to enhance the nature of required student-to-student interactions.

A student summed it up as follows, “No matter what you do when you are trying to figure out the integrity of your classes, you have to have some interaction for accountability ... but we don't need busy work.”

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## **Discussion**

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An important component of student satisfaction is the extent to which students feel engaged. Engagement is a multi-faceted issue that includes connections with course materials, faculty, other students, and the campus. This is also true in online programs.

Through this current study, we learned that students find student-to-student interactions useful in certain circumstances, e.g., when actual discussion takes place, when they learn from each other. Students do not find student-to-student interactions useful when the required interaction is rote and when instructors are not guiding the process. Many faculty members include peer-to-peer interactions in their online courses, but, as noted by the study participants, in some cases, not enough attention is paid to the structure of those interactions.

Our findings reinforce earlier work that suggests some form of student-to-student interaction is important as long as it is authentic (Martin & Bollinger, 2018; Swaggerty & Broemmel, 2017). Students in our study recommended that faculty consider using small groups – or subgroups – for discussion board assignments to enhance the experience. Making topics and discussions relevant was also noted by students in the study. This corresponds with research by Ji-Hye Park and Hee Jun Choi (2009) who showed predictive “organizational support and relevance” (p. 1) as key factors encouraging retention in online courses. Designing discussion boards to build upon students' real-world experience through sharing of “best practices”, problem solving techniques, and tips to assist with the program, as well as with their career aspirations, were also suggested.

Students very much appreciated instructor presence and instructor interaction with the discussion boards. James Johnston et al. (2005) found that student satisfaction was directly related to instructor presence in online courses and cautioned that instructors should not assume that they can be invisible online. Similarly, Sevda Kucuk and Jennifer Richardson (2019) found that “... when the teaching presence is strong, online learners are more likely to be satisfied with their online courses (p. 206). Our study reinforces the importance of instructors guiding the discussion board requirements, rather than accepting superficial comments, such as “good idea”, and allowing discussions to flounder.

Underscoring the point, discussion forums that were unstructured, or required posting and responding in ways that were rote in order to complete a course requirement – rather than to enrich their knowledge and skills – were deemed a “waste of time,” similar to findings by Janet Buelow et al. (2018) as well as Moore et al. (2016).

Furthermore, required peer-to-peer interactions in online courses should not be assumed to be necessary. In some cases, it might be prudent to have informal discussion opportunities among students or to not have any related requirement regarding student-to-

student engagement. Respondents in this study indicated that required student-to-student interactions should be determined on a course by course basis and not assumed to be appropriate for all online courses and all online students.

In addition, students in our study indicated that the clearer the relationship between the course objectives and the student engagement requirement, and the clearer the design of the expectations for, in this case, discussion board interactions between students, the more worthwhile the students found the experience, provided they were given time to engage thoughtfully with each other.

A few students in the study mentioned the notion of community building through the courses. The literature suggests that social presence reduces feelings of isolation on the part of online students and can facilitate authentic interactions among students on relevant topics (Whiteside et al., 2017). While some students in the study were interested in making those types of connections, others expressed sentiments akin to Lorenzo's (2012) observation that some online students prefer to work independently. Overall, the participants in this study were clear that they did not want to waste their time on activities that they considered superficial. Rather, most students would have preferred no student-to-student interaction over busy work.

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### **Suggestions for online teaching and learning**

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Primarily, instructors and course designers would benefit from asking themselves the following questions prior to requiring student-to-student interactions in online courses:

1. What can the students gain from interacting with each other given the course content and timeframe of the course (e.g., new perspectives, additional insights into real-world application of the material, communication skills)?
2. Does the potential benefit of student-to-student interaction outweigh the potential costs to students and the instructor in terms of time (e.g., can time be allotted for authentic, rather than rote, interaction between students)?
3. If it is decided that student-to-student interactions are important to the pedagogical experience of the course, how can the course assignments be designed so that the students can engage in meaningful dialogue that will enhance learning of the material and application of the material in the future (e.g., small group discussions, buddy system for exploring real-world application of the material)?
4. How will the instructor guide any required student-to-student interactions in the online course (e.g., ability to make their presence known, to help students stay on point, to clarify issues that emerge during the discussions, to help students work well together)?

5. What informal (during the course) and formal (end-of-course) evaluation methods will be used to assess the usefulness to students of the required student-to-student interactions (e.g., early-course and end-of-course surveys to help strengthen, modify, or eliminate the requirement as appropriate)?

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### **Summary**

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Among the most important take-aways from this study is that students value their learning and their time. They want authentic experiences that foster the development of knowledge and skills, rather than activities that seem to be filling time rather than purposefully using it. To foster student satisfaction with student-to-student interactions, if a course does include a required discussion board, instructors should be prepared to provide clear guidelines that are enforced for posts and responses, consider assigning students to small subgroups within the boards to encourage actual discussion between students, provide at least periodic input on posts/responses to facilitate learning, and incorporate topics that are relevant to the students' career interests.

In terms of additional requirements beyond discussion boards, instructors would be advised to consider the challenge that online students have in coordinating schedules given that many of them work full-time and/or live across time zones. Instructors should also describe in detail their expectations of the students in group projects so as to address concerns about the distribution of labor and provide contingency plans if students are unable to complete projects as part of a group so as not to disadvantage other members of the group.

Student-to-student interactions in online courses should not be required unless they are going to be well designed. Class requirements should not ask students to post a question so that anyone in the class can respond to it. Rather, assignments should be structured to encourage discussion between a small number of students. They should not encourage a "check-box" approach; rather, they should allow time for students to engage with each other on a topic of relevance. Similarly, required group assignments should take into account the different time zones of the participants and the need to ensure guidelines within the syllabus that address the division of labor and consequences for students being unresponsive to others in their group as well as those not contributing as appropriate to the group's work.

As noted by Sunny Liu (2008), effective online interaction for students isn't an isolated matter. It involves the entire institution. Administrators interested in attracting students to their online programs, instructors seeking to enhance online student learning, and instructional designers assisting the faculty with online courses would be well served to reflect deeply on the use of required student-to-student interactions in their online courses. The implications of this



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study suggest that those involved should ensure that student-to-student interactions are authentic, or reconsider the necessity of the requirement on a course by course (instructor by instructor) basis.

Administrators are encouraged to support faculty and instructional designers as they review and revise assignments pertaining to student-to-student interactions in courses. For example, administrators can provide release time for faculty to redevelop their required assignments. Administrators can also illustrate their openness to the complex nature of required student-to-student interactions and encourage dialogue among faculty on whether or not such assignments are useful – and if so how – for a particular course.

Institutions should be concerned about this issue because student satisfaction is an important component in retention and, at least in some countries such as the U.S.A., in philanthropic behavior once the students become alumni.

The authors recommend taking the personal life situations of the students studying online into consideration when incorporating student-to-student interactions into courses. As noted above, the average age of undergraduate students studying online is 32, and 84% are employed (Friedman, 2017). Many have family and other obligations, so they are particularly sensitive to work that appears to be trivial or unnecessary. Hence, learning elements such as peer-to-peer interactions should be incorporated into courses intentionally and with purpose so that the interactions do not appear to be busy-work or checking an interaction box.

## Limitations of the study

As a qualitative study, there is the possibility of bias in recording and interpreting the data. Also, the students in this study were at different points of their academic pursuits, e.g., the beginning of their online program, the middle of it, and near or at completion. It is possible that student response was impacted by the amount of time in a program. While acceptable for a qualitative study, the sample size was small.

## Suggestions for future research

In terms of future research, assessing students at specific points in their programs might be useful. In this way, an idea of the long-term impact of required student-to-student interactions might be gleaned.

Furthermore, while some work has been done on comparing instructor and student attitudes toward engagement online (e.g., Bollinger & Martin, 2018), a closer look at the factors influencing the decisions faculty make on whether or not to require student-to-student interactions online and whether or not to engage with discussion boards would provide insights that might help guide institutions, instructors, and related staff on this matter.

Considered as a group, it appears that instructors may be underestimating their role in guiding student-

to-student interactions and overestimating the benefit of such interactions without adequate instructional direction and oversight. The faculty are themselves juggling numerous responsibilities – professional and personal – and it would be useful to explore the factors influencing instructors' decisions to require or not to require online student-to-student interactions.

A larger sample size – including a multi-country study – could provide further statistical confirmation of the results. This study might also be replicated with alumni of online programs. Further study is encouraged to facilitate the educational experience of online students.

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