COMMUNITY OF INQUIRY ANALYSIS OF ALIGNMENT BETWEEN INSTRUCTORS' INTENTIONS AND STUDENTS' PERCEPTIONS IN ONLINE COURSES

Gi-cheol Kim, Georgia State University
Rachel Gurvitch, Georgia State University

ABSTRACT

According to the Community of Inquiry model, the online learning experience is optimized when instructors properly address three critical components throughout their teaching: teaching presence (TP), social presence (SP), and cognitive presence (CP). Considering these constructs, this study investigated the following questions: (a) What are instructors' intentions? (b) What are students' perceptions? and (c) What is the alignment between the instructor's intentions and the students' perceptions? Four instructors teaching five online courses with 44 students completed the CoI surveys. Results indicated that TP received the highest score among instructors (M = 4.05, SD = 0.32) and students (M = 4.01, SD = 0.65) whereas SP was the lowest among instructors (M = 2.64, SD = 0.69) and students (M = 3.60, SD = 0.59). Results also identified two courses with weaker alignments than the other courses. A discussion regarding the variations between traditional and distance learning from a different has merit. If enhancing the distance learning experience is a priority, online instructors should create effective social presence opportunities within their courses.

Keywords: online education, alignment, community of inquiry, kinesiology

INTRODUCTION

The rapid advancement of technology during the past decades has changed the world and society, including education. One of the most notable changes in education has been the rise of teaching and learning conducted, in full or in part, over distance (Fishman et al., 2016). Notably, online learning in higher education has been a growing trend in the United States (Ginder et al., 2019). Ever since the launch of the first online degree programs more than two decades ago, the number of online courses has grown dramatically and has been well documented by a series of annual reports (Allen & Seaman, 2006, 2013; Seaman et al., 2018).

On top of these growing trends, the global COVID-19 pandemic puts an immediate pressure on traditional educational models. Educators around the world practice strict guidelines of social distancing that challenge the fundamentals of traditional face-to-face instruction. At the same time, educators attempt to maintain quality educational programs to the best of their abilities. Overnight, millions of students and teachers made the switch to distance learning platforms and moved to Emergency Remote Teaching (ERT). ERT was defined by Hodges et al. (2020) as "a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances." It involves using fully remote instruction that would otherwise be delivered face-to-face and that will return to the original format once the crisis has abated (Hodges et al., 2020). The swift transition to the online setting and the insufficient time to prepare for it resulted in a concern that online learning be

seen as a lower quality experience. However, the concern for quality learning experience still holds. Since online education delivery has become a top academic priority in response to the needs of students and educational institutions (Gallagher, 2019), there is a greater need now to document quality online pedagogy.

Measuring the effectiveness of online programs is an important issue to determine the impact of such courses or programs on students' learning outcomes. According to several research studies (Hodges et al., 2020; Means et al., 2014), effective online teaching and learning experiences depend on careful planning and good design considerations. Online instruction not only features a communication process that is different from the traditional instruction, but it also leaves lots of digital footprints that provide abundant data for further analysis. In that regard, further study on this topic is warranted.

Theoretical Framework

Among several theoretical frameworks of online pedagogy, the Community of Inquiry (CoI; Garrison et al., 1999) has been recognized as one of the most used. It focuses on effective pedagogical practice in online teaching and learning (Bozkurt et al., 2015). There are numerous studies of adopting the CoI model as a guide to online instructions that measure teaching effectiveness and the students' learning experience. However, few accounts have examined the potential of CoI as a framework to advance online teaching and learning in Kinesiology (Hersman & Schroeder, 2017; Kim & Gurvitch, 2020; Martinez & Barnhill, 2017). According to Garrison et al. (1999), the online learning experience is optimized when instructors properly address three critical components throughout their teaching: teaching presence, social presence, and cognitive presence.

The teaching presence component focuses on the instructor's role in the design, facilitation, and integration of the cognitive and social aspects within online learning environments. (Anderson et al., 2001). Several research studies have focused specifically on teaching presence. Liu (2019) examined the effects of weekly reflections and questioning methods on learning in online higher education classes. The results from this study indicated that reflection and questioning methods were effective in engaging and challenging online graduate learners. In another example, Robinson et al. (2017) focused on online collaborative opportunities within online learning environments. This qualitative study offered suggestions for a successful online collaborative learning environment. Instructors need to consider providing appropriate design and sufficient time and avenues for student support, and they should be mindful of the students' comfort level with collaborative online tools.

The social presence component within the CoI framework refers to the development of positive and supporting social interactions among students within a specific learning group while maintaining a productive social climate (Garrison, 2009). For example, d'Alessio et al., 2019 focused on the social component within the CoI framework. These researchers collected data from one geology course over eight semesters and discovered that students who reported higher social presence and cognitive presence had overall higher course grades. Ultimately, the researchers concluded that when instructors build a supportive learning community and facilitate student learning interaction around course ideas, performance benefits are higher.

The third component, cognitive presence, is defined as the extent to which students can construct and confirm meaning through systematic reflection and discourse that focus on students' development of critical and higher-order thinking (Garrison et al., 2001). Several research studies focused specifically on cognitive presence within the CoI framework. For example, Chen et al. (2019) investigated the characteristics of online students' cognitive presence in online discussions. In most discussion messages, the level of cognitive presence remained low; however, the peer-facilitator strategy was found to be associated with students' higher cognitive presence. Researchers concluded that peer facilitators can enhance cognitive presence within online courses through using specific questioning techniques.

Problem Statement

Many researchers embraced the Community of Inquiry model and its three key components as one of the leading frameworks for online educational environments. Through their original presentation of the framework, Garrison et al. (1999) presented the idea of the three key components of learning—cognitive presence, social presence, and teaching

presence—as equal contributors to an optimal design of educational experiences. Educators were encouraged to consider the integration of these three components that leads to a more interactive, authentic, and engaging learning experience (Garrison, 2017).

Education, however, involves diverse fields, and the variety of fields educates and trains diverse professionals with different skill sets in higher education institutions. Therefore, the ultimate balance among the three key components should be flexible to uphold the needed dynamic of the subject matter. Instructors may have an instructional plan regarding the implementation of the three CoI components and the balance among them. These plans will have relevant learning activities, assignments, and assessments that lead to a set of learning outcomes. For this study, we referred to these plans as instructional intentions. The instructional goals, purposes, and aims represented the intent (i.e., what one means to do) when the instructors designed the course learning activities that would impact the students' learning experiences. This study focused on the alignment between instructors' (instructional) intention and the students' perceptions of their online learning experiences. In other words, this study aimed to examine if (and at what level) deliberateness led to different learning experiences in online environments (See Figure 1) and by doing so, to gain insight into effective online instruction.

Ideally, instructors' intentions and their students' perceptions should be aligned and match each other, so that students may fully recognize the worth of the instructors' optimized teaching process. From the CoI perspective, the ideal situation would reflect that the instructor's intentions for higher cognitive presence in a specific course would match with students' perceptions of higher cognitive presence. This would be an example of good alignment between instructor's intention and students' perceptions. However, an instructor's intentions are not always well received by their students, which then creates misalignment in the teaching and learning process. Consequently, this misalignment could hinder the effectiveness of the online learning environment (Reeves, 2006). Therefore, the purpose of this study was to explore the instructors' intentions when teaching online courses and the students' perceptions following their online learning experiences, and to examine the alignment between the instructor's intentions and the students' perceptions. For this purpose, we adopted the CoI as the guiding framework for this study. The research questions that guided this investigation were: (a) What are instructors' intentions considering teaching presence, social presence, and cognitive presence? (b) What are students' perceptions considering teaching presence, social presence, and cognitive presence? And (c) What is the alignment between the instructors' intentions and students'

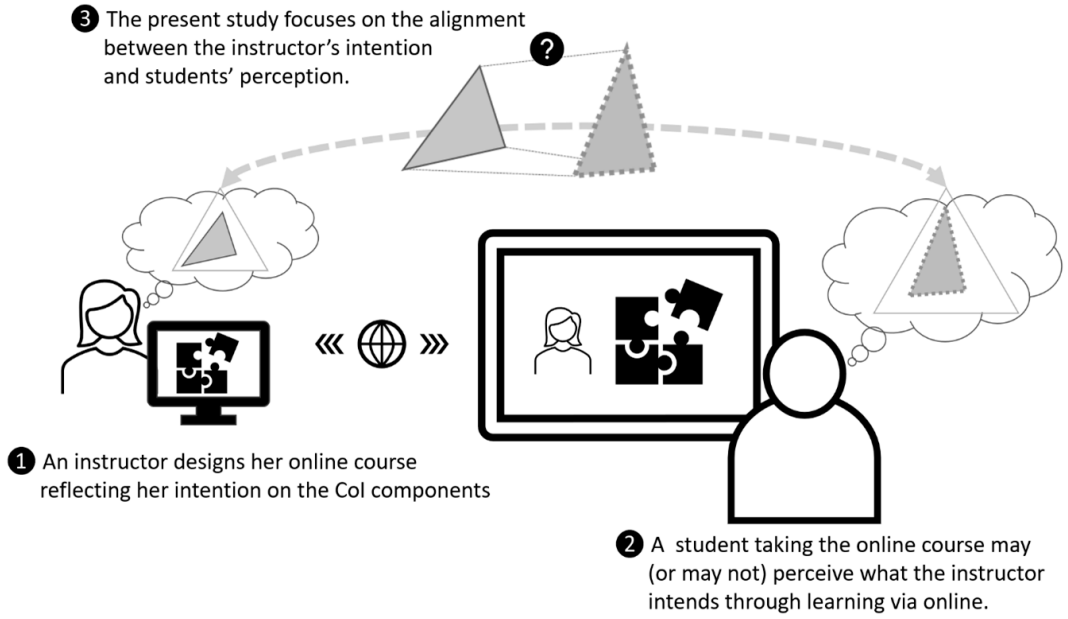


Figure 1. Conceptual Model of the Present Study

perceptions considering teaching presence, social presence, and cognitive presence?

METHODS

Study Design

To answer the research questions, we conducted a quantitative, multiple case study (Yin, 2014). Adopting a case study design allowed for rigorous inquiry on issues relevant to the instructor-learner alignment within the online environment. In particular, we focused on the quantitative data by adopting an online survey method (Fowler, 2014).

Participants and Data Sources

The participants of this study were students and instructors of online courses at a university located in the Southeastern of the United State of America. In spring 2019, we contacted instructors who were teaching online courses in the Kinesiology Department and successfully recruited four instructors. One of the instructors taught two different courses, so the current study included data from five courses. Among the four instructors who participated in the study, one was a full professor, two were part-time instructors, and one was a fourth-year doctoral student. All the instructors taught their respective courses prior to Spring 2019, so this was not their first time teaching this specific course online. All five courses were delivered fully online with no physical contact and with limited synchronous gathering online. Each of these courses was a unique course with its own distinct content but all courses were offered within Kinesiology. Course A examined foundational knowledge on health and was taught by a graduate teaching assistant. This course was the only undergraduate level course within this study. Course B focused on adapted physical education, and the instructor was full-time faculty. Course B was also the only course where the instructor had a graduate teaching assistant who assisted with grading writing assignments. Course C examined the topic of leadership and was taught by a retired engineering counselor who served as a part-time faculty. The instructor of course C authored multiple leadership books and has been considered an expert in the topic. Course D and E were taught by the same part-time instructor whose primary workplace was the professional organization related to public health. These courses focused on drug use and prevention and school health. See Table 1 for a summary of the courses' contextual analysis.

A total of 107 students enrolled in these five courses and all were asked to volunteer to participate in this study. Of the 107 students, 44 agreed to participate in the study and completed the CoI survey, which was a 41.12% of response rate. This study included data generated from the students' responses to the CoI survey (Arbaugh et al., 2008) and the instructors' responses to CoI survey.

Community of Inquiry Survey Instrument

Arbaugh et al. (2008) developed the CoI survey instrument (Appendix 1) to measure students' perception of educational experience based on the constructs of the CoI framework. This instrument had been tested in construct validity and reliability (Swan et al., 2008) and used to measure students' perspectives on the effectiveness of online courses (Garrison et al., 2010; Stenbom, 2018). The CoI survey instrument contains 34 items across three CoI framework elements. All survey items anchor on a 5-point Likert scale ranging from Strongly Agree to Strongly Disagree. For this study, student participants were asked to reflect on their experience as students in the specific online course and respond to the CoI survey towards the end of the semester.

To examine instructors' intentions on their online courses, we requested instructors to respond to a modified CoI survey (Appendix 2). While the original CoI survey questions were designed to measure the students' perceptions on their online

TABLE 1. COURSES' CONTEXTUAL ANALYSIS

	Instructor	Rank	Teaching Assistant	Level	Course Type
Course A	Mr. Robert	PhD student	No	Undergraduate	Asynchronous
Course B	Dr. Jamie	Full-time faculty	Yes	Graduate	Asynchronous
Course C	Dr. Amber	Adjunct Instructor	No	Graduate	Asynchronous
Course D	Dr. Houston	Adjunct Instructor	No	Graduate	Asynchronous
Course E			No	Graduate	Asynchronous

learning experience, the instructors' version of the CoI survey sought to learn the instructors' intentions or aspirations as these relate to the CoI components within their online teaching (Stenbom, 2018). For this study, we slightly modified the students' perceptions CoI survey mainly to address the instructors' point of view when responding to the modified CoI survey.

Data Analysis

We collected the online survey responses and used descriptive statistics to summarize the overall CoI scores and the three subscales within the CoI framework. One-way Analysis of Variance (ANOVA) was adopted to test mean scores of subscales and to compare scores gained from the five courses. To determine the extent to which the instructors' intentions and the students' perceptions are aligned with each other, we compared instructors' CoI scores and students' CoI scores by calculating the difference between the students' scores and the instructor's score. The following formula represents the calculation method:

$$Difference = \sqrt{\left\{\frac{\sum_{i=1}^{n}(S_i - I)}{n}\right\}^2} = |\bar{S} - I|$$

*S = student's CoI score; I = instructor's CoI score; n = group size

RESULTS

Instructors' Intention

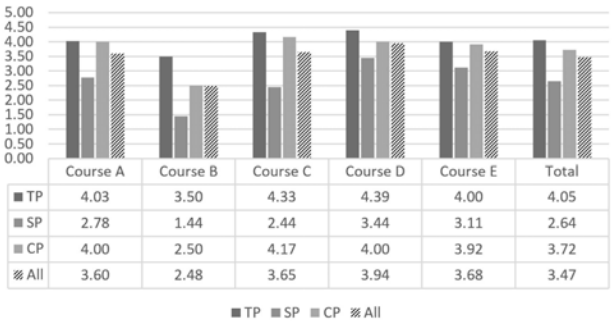
Prior to designing a specific course, the instructor has a blueprint for achieving the learning objectives that guides the instructor when planning certain learning activities. These activities may vary but all of them are expected to contribute to carrying out what the instructor intended. Hence, no two courses are identical, and every course is unique. The five courses investigated in this study were distinctive in their context, content, learning outcomes, design, and learning activities (See Table 2). Therefore, the first research question addressed

TABLE 2. INSTRUCTIONAL FEATURES OF COURSES

Course	Description	Group assignment	Discussion board	Peer review	Textbook	Physical activity	Video lecture	Synchronous meeting	Short quizzes	Real-world application	Critical writing
A	This course purposed promoting healthy lifestyle, featured with its emphasis on physical exercise.	—	—	—	●	●	—	—	●	○	—
B	This course focused on scientific knowledge and contained a wide variety of learning activities.	○	○	○	○	○	○	○	○	○	○
C	The focus of course C was on leadership skill acquisition by modifying student leadership perspectives.	—	—	—	◑	—	○	—	—	○	◑
D	This course focused on scientific knowledge and its application on school context.	—	●	●	●	—	—	—	○	○	○
E	The purpose was to equip students with relevant professional skills to develop school health programs.	—	◑	◑	—	—	—	—	—	◑	◑

* Note: ● = Every week (85%); ◑ = Regularly (>=4 times); ○ = More than once; — = Never

instructors' intentions as they designed their specific courses in this study. The four instructors responded to the modified CoI survey questionnaire. The purpose of this questionnaire was to measure instructors' intentions as these relate to the three components within the CoI framework. Figure 2 presents the instructors' average scores within the five courses and a compatible graph.



	Course A	Course B	Course C	Course D	Course E	Total
TP	4.03	3.50	4.33	4.39	4.00	4.05
SP	2.78	1.44	2.44	3.44	3.11	2.64
CP	4.00	2.50	4.17	4.00	3.92	3.72
All	3.60	2.48	3.65	3.94	3.68	3.47

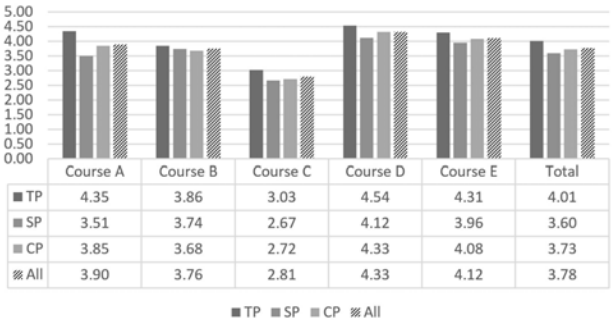
Figure 2. Instructors' CoI Results

Among the subscales, teaching presence was the highest (M = 4.05, SD = 0.32) whereas social presence was the lowest of all three subscales (M = 2.64, SD = 0.69). We compared the three subscales through the ANOVA test and found that the average of social presence (2.64) was significantly lower than the other subscales, $F(2,12) = 6.83$, $p = .0147$. This means that instructors underestimated the social presence contribution to the course when comparing to the teaching presence and cognitive presence. The instructor of course B reported the lowest social presence score of 1.44, which hinted that this instructor did not have a strong intention to include social presence as a relevant component in their course. The ANOVA analysis revealed that teaching presence and cognitive presence were not significantly different from each other, $F(1,8) = .923$, $p = 0.364$.

The average score of instructors' CoI was 3.47 (SD = 0.51). Course D reflects the highest CoI score with 3.94 while course B reflects the lowest CoI score of 2.48. These scores reflect the instructors' intentions that influenced their course design, while considering the three CoI subscales.

Students' Perceptions

Out of 107 students who enrolled in the five online courses, 44 completed the CoI survey (41% response rate). Figure 3 presents the results of the CoI survey and the details of the students' perceptions as these relate to the three components within the CoI framework.



	Course A	Course B	Course C	Course D	Course E	Total
TP	4.35	3.86	3.03	4.54	4.31	4.01
SP	3.51	3.74	2.67	4.12	3.96	3.60
CP	3.85	3.68	2.72	4.33	4.08	3.73
All	3.90	3.76	2.81	4.33	4.12	3.78

Figure 3. Students' CoI Results

The average CoI score of students across all five courses was 3.78 (SD = 0.53). Similar to their instructors, the average of students' teaching presence scores was the highest (M = 4.01, SD = 0.65) followed by cognitive presence (3.73, SD = 0.55) and social presence (M = 3.60, SD = 0.59). This was the same order found with instructors; however, unlike the instructors' intentions, the difference between the three subscales among for the students' perceptions CoI was less evident. According to the ANOVA results there was a significant difference among the three subscales. Teaching presence was significantly higher than the other two, $F(2,129) = 5.12$, $p = .007$, whereas social presence and cognitive presence were not significantly different, $F(1,86) = 1.16$, $p = 3.95$.

Students in Course D reported the highest CoI score marking an average of 4.43 (SD = 0.33), which was followed by Course E, A, B, and C. For further comparison, an ANOVA test was conducted and

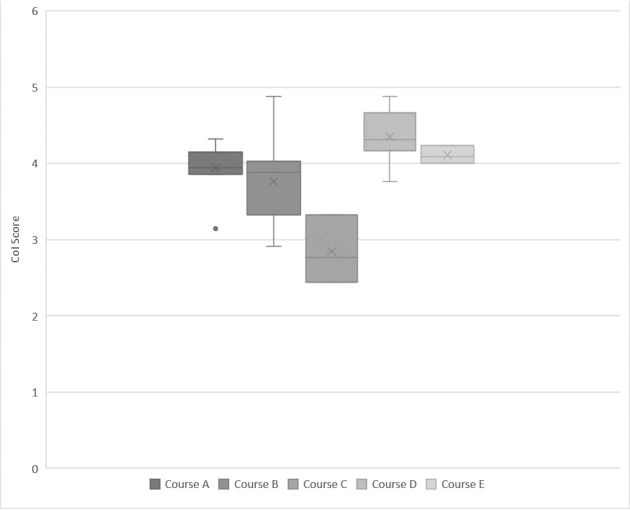


Figure 4. Box Plot Chart of Courses

showed that there are significant differences among courses, $F(4,39) = 9.37$ ($p < .001$). The following ad hoc test revealed that course C was significantly lower than the others as seen in the box plot chart in Figure 4. Therefore, it seems that students in course C perceived the CoI components to be significantly lower than the other four courses.

Alignment between Instructor's Intentions and Students' Perceptions

Table 3 presents the calculation of the differences between instructors' intentions and students' perceptions in absolute values using the formula above. These differences symbolize the strength of alignment between instructors and students, whereas the lower value of the difference means higher alignment (i.e., scores of instructors and students are closer to each other).

TABLE 3. THE DIFFERENCES BETWEEN INSTRUCTORS' INTENTIONS AND STUDENTS' PERCEPTIONS

	Teaching Presence (TP)	Social Presence (SP)	Cognitive Presence (CP)	Sum
Course A	0.32	0.73	0.15	1.20
Course B	0.36	2.30	1.18	3.83
Course C	1.31	0.22	1.44	2.97
Course D	0.15	0.68	0.33	1.15
Course E	0.31	0.85	0.17	1.32
Average	0.49	0.95	0.65	2.10

When looking at the teaching presence subscale across all five courses, it is evident that the difference between the instructor' intentions and their students' perceptions in course C is higher (1.31) than all other courses, which means that when looking at teaching presence components, course C had the lowest alignment. Alternatively, the results for the social presence subscale across all five courses revealed that course B had the highest (2.30) difference between the instructor' intentions and their students' perceptions. These results indicate that when considering social presence, course B had the lowest alignment. When looking at the cognitive presence subscale difference scores, it is evident that course C had a lower alignment due to the highest difference scores (1.44) between instructor' intentions and their students' perceptions.

When comparing the overall differences scores

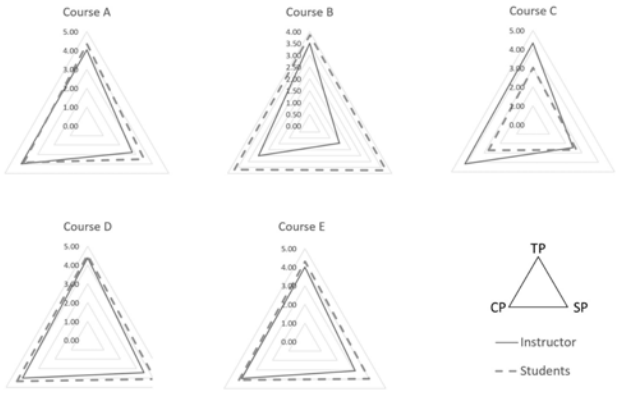


Figure 5. Comparisons of Instructors and Students

across all five courses, course A, D, and E have a stronger alignment score than the others. When looking at the course-by-course triangle graphs (see Figure 5), courses A, D, and E represent a higher level of congruency—which represents the higher level of alignment between the instructor's intentions and their students' perceptions in each of the respective courses. Course B and course C represent a different case. The triangle graphs for Courses B and C demonstrate a lower level of congruency, which indicates a lower level of alignment between course instructor's intentions and their students' perceptions. One explanation could be the large gap noted caused by the instructor's low social presence score in course B. Similarly, course C noted bigger differences in teaching presence and cognitive presence than other courses, which directly contributed to the higher difference score.

Looking at the graphs in Figure 5, the differences between instructors' intentions and students' perceptions have a direction. In Courses A, B, D, and E, the triangle that represents the instructors' intentions (solid) is positioned inside the triangle that represents the students' perceptions (dotted). In general, this shows that the students' scores on all subscales of the CoI framework are higher than the instructors' scores on the same subscales in these four courses. This data represents the notion that students' perceptions were higher than their course instructor on all subscales hinting that instructors' intentions went farther along than what they intended. Data from course C shows the opposite case. Looking at course C graph, the triangle that represents the instructors' intentions (solid) is positioned outside the triangle that represents the students' perceptions (dotted). This means

that students' scores on all subscales of the CoI framework are lower than the instructor's scores on the same subscales for this course. This data suggests that the instructor's intentions did not go as far to meet students' perceptions in this course.

DISCUSSION AND IMPLICATIONS

Teachers' Intentions

The results from the instructors' CoI survey demonstrated a very clear message, across all courses and all instructors, that teaching presence is of great worth. Despite the diversity of the instructors' academic positions within the university system (i.e., doctoral student, part-time instructor, and full-time professor), all four instructors who participated in this study noted that when thinking and planning for their course, teaching presence was their foremost intention and expectation. The instructors admitted that their attention and intentions when teaching their courses were mainly related to the teaching presence subscale within the CoI framework. This finding is not surprising because teaching presence has dominated the educational field for many years. Today's teachers grew up with the model of the teacher as the leader of the educational experiences and thus it became their intention to be that leader for their own students. Recent studies support the instructor's key intention of teaching presence by noting that every successful learning environment depends on the teachers designing an appropriate class, establishing sufficient time, and providing attention to the students' comfort level using online tools while offering them support (Robinson et al., 2017).

A perfect opposite situation was noted when we examined the social presence among those teachers. The teacher who expressed a strong intention towards teaching presence expressed very little intention towards the social presence component within the CoI model. The results from the instructors' CoI survey noted that the social presence component was significantly lower across all instructors, regardless of their academic positions. The instructors' weaker intention toward social presence seems to result in the instructional features as they appeared in Table 3; that is, learning activities related to the social interaction, such as group assignment or synchronous meeting, were rare in these courses. The social presence comes naturally when in the traditional classroom settings, so most instructors never had to make special effort to include opportunities for social presence throughout their course. However, when the learning environment changes to an online environment, there is no longer a physical classroom that serves as a meeting place for social interaction. Unfortunately, it seems that instructors across all different academic positions do not embrace the importance of social presence and do not prioritize their intentions in developing social presence. The instructors believed the students should find their social opportunities regardless of the course design and content, therefore arranging for social presence opportunities should not be a formal component in their course. Researchers and educators should reflect on this notion since earlier research has demonstrated that facilitating student interaction around course ideas contributes to higher performance achievements (d'Alessio et al., 2019).

Students' Perceptions

Similar to their instructors, the students' CoI survey results demonstrated a very clear and matching message. Overall, students across all five courses perceived teaching presence to be the highest among all other subscales. When considering the common educational practice where the instructor is the one who designs the course learning outcomes, assignments, and assessments, these results fit perfectly. The students have been accustomed to appreciating the teachers' leading role as the focal point of the academic course and found teaching presence to match their perception.

It is interesting to note that although not significant, most of the students perceived social presence to be the least dominant across all courses (with the exception of course B). These results do not represent the students' lack of social presence awareness but rather explain how the students perceived the social presence opportunities within the specific online course. Despite earlier research that connected social presence with overall higher course grades (Joksimović et al., 2015), these results are not surprising because social presence is not yet perceived, even by the students, as the principal component within an online course.

Based on the results of students' perceptions, students had learned in a way that instructors intended, and the way retained the characteristics of traditional education where an instructor directs

learning processes. Garrison et al. (2004) explored the adjustment of roles by comparing students' perceptions of face-to-face learning and online learning. They indicated that learners perceived their role differently in different contexts. Regarding face-to-face, students put more weight on teaching presence when pertaining to externally oriented learning, whereas students focused first on cognitive presence with regard to online learning.

Alignment between Teachers' Intentions and Students' Perceptions

In addition to the measure of instructor' intentions on each of the CoI subscales and students' intention on each of the CoI subscales, we measured the gap between instructor's intention and their students' perception on each of the CoI subscales. This mathematical gap expresses the difference between the instructors and the students. In other words, the larger the score on the alignment table, the larger the difference between the instructor and their students. A large difference score reflects weaker agreement between the instructor's intentions and their students' perceptions, which means a weaker alignment. Therefore, the results from this study show that courses B and C have weaker alignments when comparing to courses A, D, and E. However, despite the weaker alignment of these two courses, there is a clear difference between course B and C. The instructor in course B, a full professor who has been teaching in academe for over 20 years, has very high academic expectations from herself and her students and therefore responded very critically on her CoI, especially in the area of social presence (which affected her overall CoI score) and contributed to a lower CoI alignment score overall. In this case, the students' CoI score was much higher than their instructor's score, and although weaker in alignment, the direction was positive like the four other courses. Course C was the only course that represented a weaker alignment with a negative direction. The instructor in course C, a retired business leader who earned his doctoral degree in business administration, has IT experience and is very knowledgeable on leadership topics, but he is not a professor in academia. The data suggest that he had high intentions in all the three subscales, which produced a very high instructor's CoI score, but his students' perceptions did not match resulting in a very low alignment CoI score. However, as opposed to course B where the misalignment was positive, for course B the direction of the misalignment was negative. Course C is the only course among the five courses where the instructor's intentions were higher than the students' perceptions, which contributed to rather disappointing results for this course.

IMPLICATIONS AND FUTURE DIRECTIONS

After analyzing the results across the five instructors broken down by the three CoI subscales, it became apparent that when considering the effectiveness of online education, the aspect of social presence is worthy of attention. For many years, the traditional, face-to-face teaching and learning settings dominated the educational experiences across all levels and settings. Although opportunities for online courses started to make a debut, these online courses or programs (e.g., MOOCs) never took over the traditional instructional process. Due to several circumstances, the global pandemic being one of them, there is a need and a strong movement for more and better online learning opportunities. K–12 schools and universities are now pushing more than ever for effective online instructional opportunities. One important aspect for the success of new distance learning environments is students' engagement opportunities where social presence is a critical component. The data in this study demonstrated that instructors across the five online courses rated social presence as the least to influence their instructional intentions, and this resulted in a misalignment between instructors and students.

It is worth discussing the variations between traditional and distance learning from a different perspective. In addition to sharing the same space at the same time, students in the traditional classroom may undergo social contacts pertaining to social presence prior to any learning experience. To some extent, such social contact occurs constantly and without intervention during and after the course. The experience of learning from a distance, and possibly at a different time, poses a real challenge affecting the social presence in a course. If enhancing the distance learning experience is a priority, in addition to teaching presence and cognitive presence, instructors should make an investment in creating effective social presence opportunities within their courses. The results of

this study support earlier studies (Gilbert & Moore, 1998; Moore, 1989) that emphasized the importance of social presence as a key component supporting the cognitive and motivational aspects within higher education settings. Specifically, social presence supports cognitive presence by building a climate of trust, comfort, and wise risk-taking, resulting in enhanced student learning (Boston et al., 2009; d'Alessio et al., 2019; Kucuk & Richardson, 2019; Rolima et al., 2019). Higher education instructors should be reminded that the social connection among students is not embedded in their online course (as it would be in the face-to-face courses), and therefore they should reconsider their lack of instructional commitment to the social presence component and search for creative instructional activities to foster social connectedness within their online courses. It is possible that the apparent low instructional intention towards the social presence components originates from instructors' limited experience in teaching in online settings. Many instructors fail to understand that teaching online calls for a different pedagogical teaching philosophy and that they cannot simply teach their face-to-face class online. The acknowledgement that teaching online is a different teaching pursuit is important as a first step in enhancing the distance learning experience.

The current study established the use of the CoI framework to measure instructors' intentions, students' perceptions, and the alignment between the instructors' intentions and their students' perceptions. Specifically, this study was significant in that it investigated online courses in the field of kinesiology, which does not seem like an ideal subject for online learning. However, we did not consider the diversity of the course contents and student backgrounds, so these factors should be addressed in a future study. In terms of the CoI framework, future research should further examine the contribution of social presence interaction component to the students' achievement of learning outcomes and their motivation to learn. Furthermore, it will be interesting to interview the students and understand what contributed to their perceptions on the CoI course, specifically focusing on the social presence component. In addition, future studies should examine the correlation between the CoI alignment scores and the students' grades in the specific course to establish the importance of course alignment as an indicator of effectiveness.

REFERENCES

Allen, I. E., & Seaman, J. (2006). Growing by degrees: Online education in the United States, 2005. Southern Edition. https://eric.ed.gov/?id=ED530063

Allen, I. E., & Seaman, J. (2013). Changing course: Ten years of tracking online education in the United States. https://eric.ed.gov/?id=ED541571

Anderson, T., Rourke, L., Garrison, D. R., & Archer, W. (2001). Assessing teaching presence in a computer conferencing context. Journal of Asynchronous Learning Networks 5, 1–17. http://dx.doi.org/10.24059/olj.v5i2.1875

Arbaugh, J. B., Cleveland-Innes, M., Diaz, S. R., Garrison, D. R., Ice, P., Richardson, J., & Swan, K. (2008). Developing a community of inquiry instrument: Testing a measure of the Community of Inquiry framework using a multi-institutional sample. The Internet and Higher Education, 11(3-4), 133–136. https://doi.org/10.1016/j.iheduc.2008.06.003

Boston, W., Díaz, S. R., Gibson, A. M., Ice, P., Richardson, J., & Swan, K. (2009). An exploration of the relationship between indicators of the community of inquiry framework and retention in online programs. Journal of Asynchronous Learning Networks, 13(3), 67–83. http://dx.doi.org/10.24059/olj.v13i3.1657

Bozkurt, A., Akgun-Ozbek, E., Yilmazel, S., Erdogdu, E., Ucar, H., Guler, E., Sezgin, S., Karadeniz, A., Sen-Ersoy, N., Goksel-Canbek, N., Dincer, G. D., Ari, S., & Aydin., C. H. (2015). Trends in distance education research: A content analysis of journals 2009–2013. International Review of Research in Open and Distributed Learning, 161, 330–363. https://doi.org/10.19173/irrodl.v16i1.1953

Chen, Y., J. Lei, & Cheng, J. (2019). What if online students take on the responsibility: Students' cognitive presence and peer facilitation techniques. Online Learning, 23(1),37–61. http://doi.org/10.24059/olj.v23i1.1348

d'Alessio, M. A., Lundquist, L., Schwartz, J., Pedone, V., Pavia, J., & Fleck, J. (2019). Social presence enhances student performance in an online geology course but depends on instructor facilitation. Journal of Geoscience Education, 673, 222–236. http://doi.org/10.1080/10899995.2019.1580179

Fishman, B., Dede, C., & Means, B. (2016). Teaching and technology: New tools for new times. In D. Gitomer & C. Bell (Eds.) Handbook of Research on Teaching 5th ed., (pp. 1269–1334). Washington, DC: American Educational Research Association. https://doi.org/10.3102/978-0-935302-48-6_21

Fowler, F. J. (2014). Survey research methods (5th ed.). Sage.

Gallagher, S. (2019). Online education in 2019: A synthesis of the data. https://www.northeastern.edu/cfhets/wp-content/uploads/2019/09/Online_Ed_in_2019.pdf

Garrison, D. R. (2009). Communities of inquiry in online learning In P. L. Rogers (Ed.), Encyclopedia of Distance Learning (pp. 352–355). IGI Global. https://doi.org/10.4018/978-1-60566-198-8.ch052

Garrison, D. R. (2017). E-Learning in the 21st century: A community of inquiry framework for research and practice (3rd ed.). Routledge.

Garrison, D. R., Anderson, T., & Archer, W. (1999). Critical inquiry in a text-based environment: Computer conferencing in higher education. The Internet and Higher Education, 2(2-3), 87–105. http://doi.org/10.1016/S1096-75160000016-6

Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. American Journal of Distance Education, 15(1), 7–23. http://doi.org/10.1080/08923640109527071

Garrison, D. R., Anderson, T., & Archer, W. (2010). The first decade of the community of inquiry framework: A retrospective. The Internet and Higher Education, 13(1-2), 5–9. http://doi.org/10.1016/j.iheduc.2009.10.003

Garrison, D. R., Cleveland-Innes, M., & Fung, T. (2004). Student role adjustment in online communities of inquiry: model and instrument validation. Journal of Asynchronous Learning Networks, 8(2), 61–74. http://doi.org/10.24059/olj.v8i2.1828

Gilbert, L., & Moore, D. R. (1998). Building interactivity into Web courses: Tools for social and instructional interactions. Educational Technology, 38(3), 29–35.

Ginder, S., Kelly-Reid, J., & Mann, F. (2019). Enrollment and employees in postsecondary institutions, fall 2017. Washington, D.C.: U.S. Department of Education. https://nces.ed.gov/pubs2019/2019021REV.pdf

Hersman, B., & Schroeder, N. (2017). Strategies for designing engaging online kinesiology courses based on the Community of Inquiry Model. Quest, 69(4), 480–493. https://doi.org/10.1080/00336297.2017.1295274

Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020). The difference between emergency remote teaching and online learning. EDUCAUSE Review, 27. https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning

Joksimović, S., Gašević, D., Kovanović, V., Riecke, B. E., & Hatala, M. (2015). Social presence in online discussions as a process predictor of academic performance. Journal of Computer Assisted Learning, 31(6), 638–654. http://doi.org/10.1111/jcal.12107

Kim, G., & Gurvitch, R. (2020). Online education research adopting the community of inquiry framework: A systematic review. Quest, 72(4), 395–409. https://doi.org/10.1080/00336297.2020.1761843

Kucuk, S., & Richardson, J. C. (2019). A structural equation model of predictors of online learners' engagement and satisfaction. Online Learning, 23(2), 196–216. https://doi.org/10.24059/olj.v23i2.1455

Liu, Y. (2019). Using reflections and questioning to engage and challenge online graduate learners in education. Research and Practice in Technology Enhanced Learning, 14(1), 3. http://doi.org/10.1186/s41039-019-0098-z

Martinez, J. M., & Barnhill, C. R. (2017). Enhancing the Student Experience in Online Sport Management Programs: A Review of the Community of Inquiry Framework. Sport Management Education Journal, 11(1), 24–33. https://doi.org/10.1123/smej.2016-0009

Means, B., Bakia, M., & Murphy, R. (2014). Learning online: What research tells us about whether, when and how. New York, NY: Routledge.

Moore, M. G. (1989). Three types of interaction. The American Journal of Distance Education, 3(2), 1–7. https://doi.org/10.1080/08923648909526659

Reeves, T. C. (2006). How do you know they are learning?: The importance of alignment in higher education. International Journal of Learning Technology, 2(4), 294–309. http://doi.org/10.1504/IJLT.2006.011336

Robinson, H., Kilgore, W., & Warren, S. (2017). Care, communication, support: Core for designing meaningful online collaborative learning. Online Learning Journal, 21(4): 29–51. https://doi.org/10.24059/olj.v21i4.1240

Rolim, V., Ferreira, R, Lins, R. D., & G□sević, D. (2019). Network-based analytic approach to uncovering the relationship between social and cognitive presences in Communities of Inquiry. Internet and Higher Education, 42, 53–65. https://doi.org/10.1016/j.iheduc.2019.05.001

Seaman, J. E., Allen, I. E., & Seaman, J. (2018). Grade increase: Tracking distance education in the United States. https://eric.ed.gov/?id=ED580852

Stenbom, S. (2018). A systematic review of the Community of Inquiry survey. The Internet and Higher Education, 39, 22–32. http://doi.org/10.1016/j.iheduc.2018.06.001

Swan, K., Shea, P., Richardson, J., Ice, P., Garrison, D. R., Cleveland-Innes, M., & Arbaugh, J. B. (2008). Validating a measurement tool of presence in online communities of inquiry. E-mentor, 2(24), 1–12.

Yin, R. K. (2014). Case study research design and methods (5th ed.). Sage.

APPENDIX 1.

THE COI SURVEY INSTRUMENT FOR A STUDENT

Teaching Presence

1. The instructor clearly communicated important course topics.
2. The instructor clearly communicated important course goals.
3. The instructor provided clear instructions on how to participate in course learning activities.
4. The instructor clearly communicated important due dates/time frames for learning activities.
5. The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.
6. The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.
7. The instructor helped to keep course participants engaged and participating in productive dialogue.
8. The instructor helped keep the course participants on task in a way that helped me to learn.
9. The instructor encouraged course participants to explore new concepts in this course.
10. Instructor actions reinforced the development of a sense of community among course participants.
11. The instructor helped to focus discussion on relevant issues in a way that helped me to learn.
12. The instructor provided feedback that helped me understand my strengths and weaknesses relative to the course's goals and objectives.
13. The instructor provided feedback in a timely fashion.
14. Getting to know other course participants gave me a sense of belonging in the course.
15. I was able to form distinct impressions of some course participants.
16. Online or web-based communication is an excellent medium for social interaction.
17. I felt comfortable conversing through the online medium.
18. I felt comfortable participating in the course discussions.
19. I felt comfortable interacting with other course participants.
20. I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.
21. I felt that my point of view was acknowledged by other course participants.
22. Online discussions help me to develop a sense of collaboration.
23. Problems posed increased my interest in course issues.
24. Course activities piqued my curiosity.
25. I felt motivated to explore content related questions.
26. I utilized a variety of information sources to explore problems posed in this course.
27. Brainstorming and finding relevant information helped me resolve content related questions.
28. Online discussions were valuable in helping me appreciate different perspectives.
29. Combining new information helped me answer questions raised in course activities.
30. Learning activities helped me construct explanations/solutions.
31. Reflection on course content and discussions helped me understand fundamental concepts in this class.
32. I can describe ways to test and apply the knowledge created in this course.
33. I have developed solutions to course problems that can be applied in practice.
34. I can apply the knowledge created in this course to my work or other non-class related activities.

5-point Likert-type scale
1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

APPENDIX 2.

THE COI SURVEY INSTRUMENT FOR AN INSTRUCTOR

Teaching Presence

1. I clearly communicated important course topics.
2. I clearly communicated important course goals.
3. I provided clear instructions on how to participate in course learning activities.
4. I clearly communicated important due dates/time frames for learning activities.
5. I helped students identify areas of agreement and disagreement on course topics that helped them to learn.
6. I guided the class towards understanding course topics in a way that helped students clarify their thinking.
7. I kept students engaged and participating in productive dialogue.
8. I kept students on task in a way that they helped them to learn.
9. I encouraged students to explore new concepts in this course.
10. I reinforced the development of a sense of community among course participants.
11. I kept discussion focused on relevant issues in a way that helped students to learn.
12. I provided feedback that helped students understand their strengths and weaknesses relative to the course's goals and objectives.
13. I provided feedback in a timely fashion.

Social Presence

14. I helped students to know one another in order to let them feel sense of belonging in the course.
15. I helped students form distinct impressions of some of other students.
16. I believed online or web-based communication was an excellent medium for social interaction.
17. I helped students to feel comfortable conversing through the online medium.
18. I helped students to feel comfortable participating in the course discussions.
19. I helped students to feel comfortable interacting with other students.
20. I helped students to feel comfortable disagreeing with others while still maintaining a sense of trust.
21. I helped students to feel that their point of view was acknowledged by other students.
22. I facilitated online discussions to let student develop a sense of collaboration.

Cognitive Presence

23. I posed probing questions to increase students' interest in course issues.
24. I designed course activities to activate students' curiosity.
25. I motivated students to explore content related questions.
26. I encouraged and guided students to utilize a variety of information sources to explore problems posed in this course.
27. I encouraged and guided students to find relevant information to resolve content related questions.
28. I facilitated online discussions for helping students appreciate and value different perspectives.
29. I taught students to combine new information for answering questions raised in course activities.
30. I designed learning activities to help students construct explanations/solutions.
31. I facilitated reflection and discussions to help students understand fundamental concepts in this class.
32. I taught students to describe ways to test and apply the knowledge created in this course.
33. I taught students to develop solutions to course problems that can be applied in practice.
34. I taught students to apply the knowledge created in this course to my work or other non-class related activities.

5-point Likert-type scale
1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree