JOURNAL OF E-LEARNING AND KNOWLEDGE SOCIETY
Vol. 16, No. 4 (2020), pp. 94-103

Community of Inquiry (CoI) Framework and Course Design as Predictors of Satisfaction in Emergency Remote Teaching: Perspectives of Hospitality Management Students

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(submitted: 30/7/2020; accepted: 12/12/2020; published: 30/12/2020)

Abstract

The Community of Inquiry (CoI) is a popular framework to measure meaningful engagement and communication in distance learning environments, where it is claimed that three interactive elements of presence (teaching, social, and cognitive) enhance the quality of education and learning outcomes. However, research suggests lack of empirical evidence on its efficacy in emergency remote teaching. Using a noteworthy research contribution on CoI as the central subject of this research, we examined its applicability in remote teaching environment as a predictor of student satisfaction. In doing so, we tested the proposition that course design variables mediate the relationship between CoI and student satisfaction. A theoretical model is developed and tested using data collected from 621 hospitality students from an Institute of Eminence in India. Students were electronically queried to capture the data within a 10-day time frame. The data collected using a 34 item CoI scale, 6 item course design scale, and 6 item online course satisfaction scale were analysed using structural equation modelling and PROCESS macro 3.4 - Model 4. Overall, the results showed that the proposed model fits the observed relationships and teaching presence is the primary determinant of satisfaction. Likewise, the results implied partial mediation by course design on the relationship between CoI elements and satisfaction. We believe that this model could serve as a guide to possible future studies to explore the relevance of CoI framework in emergency remote teaching. The outcomes provide significant theoretical and practical contributions to the key stakeholders to design a satisfying online curricula as part of blended learning for the post COVID-19 era.

KEYWORDS: Teaching Presence, Social Presence, Cognitive Presence, Course Design, Emergency Remote Teaching, Students Satisfaction.

DOI
https://doi.org/10.20368/1971-8829/1135315

CITE AS
Patwardhan, V., Rao, S., Thirugnanasambantham, C., Prabhu, N. (2020). Community of Inquiry (CoI) Framework and Course Design as Predictors of Satisfaction in Emergency Remote Teaching: Perspectives of Hospitality Management Students. *Journal of e-Learning and Knowledge Society*, *16*(4), 94-103. https://doi.org/10.20368/1971-8829/1135315

1. Introduction

Back in 2009, Davidson and Goldberg, in a report on the future of learning institutions in a digital age, stated "undeniably online learning, at least at the higher education level, will become the new normal". Today, though started as a crisis management solution, virtual education has emerged as the first draft of the "new normal" for thousands of students from schools to higher educational institutions across the world. The dawn of a disturbing new reality emerged from the ravages of COVID -19 escalated the penetration of online education, earlier considered as a supplementary option, into a powerful new value proposition. A seamless transition in the higher education landscape occasioned a new hallmark in teaching-learning process owing to this new dynamo of disruption. Unsurprisingly, this posed a daunting challenge to the academic fraternity to shift to emergency remote teaching mode, expecting them to be confident in the delivery of online education overnight (Eachempati & Ramnarayan, 2020; Hodges et al., 2020). With its inherent limitations, this global experimentation with remote teaching (Golden, 2020; Hodges, et al., 2020) deserves a more in-depth study to understand its effectiveness through appropriate

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theoretical frameworks. It is time for university administrators, professors, and students to keep a record of courses that benefited them from being taught remotely, and the ones that require F2F engagements (Govindarajan & Srivastava, 2020). Though teachers are prepared to teach digitally, there are learning challenges when going online that demand ongoing evaluation to define success for emergency remote teaching (ERT) from every stakeholders' point of view. Zimmerman (2020) believes that this is an educational experiment and an opportunity to measure what 'students actually learn when we teach them online' as against Tobin (2020) who pronounces that it is not the time to assess online learning. However, Cohan (2020) considers it a good time for reflection and reshaping of remote teaching-learning, as it is more about 'transferring information' than altering the intellectual and emotional levels of the students.

Hitherto, the field of hospitality education was an applied discipline (Ladki, 1993) with a commercial orientation, designed to deliver skilled graduates to hospitality industry (Gursoy, Rahman, & Swanger, 2012; Gursoy, & Swanger, 2005; Lashley, 2000). Gradually it has become an emerging discipline of multidimensional nature (Harrington & Parsa, 2015) and curricula have evolved from a domain of vocational skills to a multidisciplinary competency-based education (Lee et al., 2016; Ottenbacher, Harrington & Parsa, 2015; Sisson & Adams, 2013). The landscape of hospitality education involves a complex combination of hands-on skills and a cluster of theory, practice, experiential learning, and specialization courses (Alhelalat, 2015; Sisson & Adams, 2013; Goodman & Sprague, 2011). As the field has developed, the strong focus on vocational values was supplemented thru liberal values that provided students with a foundation for holistic professional development in tune with industry needs (Gross & Manoharan, 2016; Zopiatis, Theodosiou, & Constanti, 2014). Today, when the online learning has become an obligation, the co-existence of vocational and liberal values supports the integration of educational technology, mainly internet pedagogy (Smadi, Parker, Gillham, & Muller, 2019; Sun, Lee, Lee, Law, 2016), in the rapid adoption to online instruction. Of key importance in this scenario is the development of suitable pedagogy to optimize student learning when online platforms are embraced for remote teaching.

The Community of Inquiry (CoI) is a popular framework to measure meaningful engagement and communication in computer-mediated distance learning environments, where it is claimed that three interactive elements of presence (teaching, social, and cognitive) enhance the quality of education and learning outcomes (Maddrell, Morrison, & Watson, 2017). Since its establishment in 2000, the CoI (Garrison, Anderson, & Archer, 2000) is one of the most widely used frameworks that describe the essential elements of successful online higher education (Castellanos-Reyes, 2020). Until now, the extensive adoption of the concept of CoI was in distance education, online (e-Learning) courses, MOOCs, and blended courses (Hilliard & Stewart, 2019; Jan et al., 2019; Micsky & Foels, 2019; Pillai & Shivatanu, 2019; Amemado & Manca, 2017; Annamali, 2017; Gutiérrez-Santiuste, Gallego-Arrufat, & Simone, 2016). There have been a number of studies on diverse predictors of student satisfaction with online courses in the extant literature (Wei & Chou, 2020; Alqurashi, 2019; Cole, Shelley, & Swartz, (2013a, 2013b); Callaway, 2012). More specifically, a few studies have examined the impact of CoI on student satisfaction (Kucuk, & Richardson, 2019; Kang, Liew, Kim, & Park, 2014; Strong, Irby, Wynn, & McClure, 2012; Cobb, 2011). Few studies focused on cohesion of design elements in creation of suitable conditions for quality learning (Ellis, Ginns, & Piggott, 2009; Biggs, 2005). A meta-analysis article by Richardson, Maeda, Lv, and Caskurlu (2017) summarized the applicability of moderators such as demographic variables, course length, type of scale used, academic discipline, and course audience to explain the strength of the relationship between social presence and satisfaction. However, there is a limited research into the potential of CoI framework in understanding the connectedness among learners in F2F courses (Harrell &Wendt, 2019; Smadi et al., 2019; Bage, 2018; Lam, 2015). The existing evidence of the significance of CoI in online learning warrants a closer investigation of its applicability in emergency remote teaching. As the current crisis is the first one to occur on the global scale in the digital era, studies examining the perspectives of online learners and learning in the context of ERT is lacking in literature.

This study makes a pioneering attempt to investigate the relevance of CoI framework for hospitality education. Here, first, we examine in the context of ERT whether students positively perceive the applicability of three interdependent dimensions of presence. Second, thus far no study has tested whether course design variables mediate the relationship between CoI elements and student satisfaction in online learning. Third, this is first study of online learning experience of Indian hospitality students, using CoI framework. We foresee the use of this report in bridging the distance gap among learners while informing the educational practitioners about the necessity to design a satisfactory online curriculum for better learning experience. Thus we propose the following frameworks and hypotheses.

H1a, b, c: A significant positive relationship exists between teaching presence, social presence, cognitive presence and learner satisfaction

H2a, b, c: A significant positive relationship exists between teaching presence, social presence, cognitive presence and course design elements

H3a, b, c: Course design mediates the relationship between teaching presence, social presence, cognitive presence and learner satisfaction

H4: A significant positive relationship exists between course design and learner satisfaction.

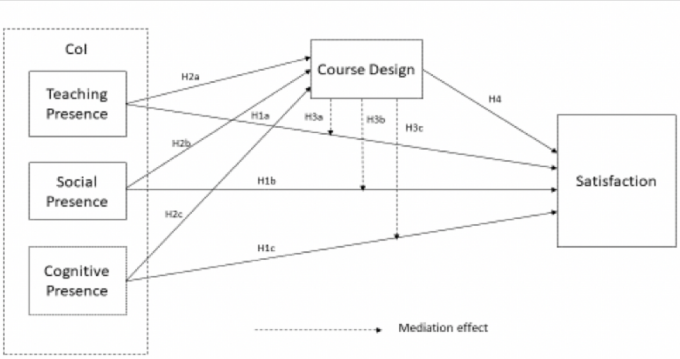

Figure 1 - Proposed theoretical mediation model and hypotheses.

2. Materials and Methods (Data Collection, Sample, and Survey Instrument)

2.1 Background

Starting from the summer of 2020, the outbreak of COVID-19 instigated Indian Universities to close the campuses and initiate online teaching. It was an unexpected massive migration from conventional face-to-face education to online education (Bao, 2020). By the third week of March, 61 countries across the world, including India have announced closure of educational institutions (UNESCO, 2020). This posed a sudden challenge to the teaching fraternity to move all the existing courses online with limited online teaching experience, lesson plan design, teaching materials, technology platforms, and support from technology support teams. Alongside, this disruption in delivery of education expected students to have right learning attitude, suitable learning materials, learning platforms, and congenial learning environment (Choudhary, 2020). Though there is massive loss in the development of human capital with long term social and economic implications (OECD, 2020), the current situation is a stress test for education systems as well as an opportunity to embrace online education strategically.

2.2 Participants

Synonymous with excellence in higher education, Manipal Academy of Higher Education, one of India's leading academic and research institution is home for over 26,000 students from 60 nations (www.manipal.edu). The diversity in student population, multiculturalism, and courses offered in different academic disciplines makes this one of the unique study locations in the region. At present, coronavirus has dramatically changed the academic life of students forcing them to vacate the campus, and subsequently they were notified to complete their course work from home, until further notice. Hence, in June 2020, 1400 hotel management, culinary arts and allied hospitality studies students were electronically queried to capture the data within a 10-day time frame.

2.3 Survey Instrument

All items used in the survey were borrowed from existing scales. CoI was measured using 34 item scale developed Swan et al. (2008). Thirteen items (α=0.943) were used to measure teaching presence (TP), 9 items (α=0.932) to measure social presence (SP), and 12 items (α=0.954) to measure cognitive presence (CP). Issues regarding course design were addressed with 6 items (α=0.900) (Ellis et al., 2009). The standardized web-based survey Online Course Satisfaction Scale (6 items (α=0.844)) adopted from Wei & Chou (2017) was used to measure student satisfaction. Socio-demographic variables (age, gender, year of study, disciplines, length of the course, and number of courses covered) were added to comprehend the characteristics of respondents. We operationalized the constructs using multi-item indicators on a 7 point Likert Scale (Strongly agree = 7 and Strongly disagree = 1). The CoI scale was subjected to EFA to re-categorise the items into distinct factors and to confirm the validity. The EFA results revealed a three-factor structure consistent with the design of the original instrument, showing substantial validity and internal consistency (α=0.974). However, four items of CoI were deleted due to low communalities (TP4, TP13, SP1, CP6, CP11).

2.4 Data Collection Procedure

The web-link of the questionnaire was emailed to the students undergoing Bachelors' degree in hotel management, culinary arts, Masters in travel and tourism, and applied nutrition & dietetics. As a reminder, a follow-up email was sent to students three days after the first email. Since this survey was the first of its kind in Indian hospitality management education, we wanted to administer it to students of all programs at the institute. Hence, it was a census survey with a twist. The survey started with a systematic beginning where every third student of a particular course was sent the questionnaire followed by 5th, 7th and 9th student and so on. During the 2nd phase, survey started with the 4th student of the same course and continued with 6th, 8th, and 10th student and continued thereafter till the last student. In total, we obtained 651 usable responses with

a response rate of 46.5%. Thirty outliers were detected while cleaning the data set, and therefore, 621 cases were retained for further analysis.

3. Results

Slightly more than half (56%) of the respondents were male. Majority of the respondents (54%) were either between18-20 years old or 21-23 (41%) years old and only 5% were older than that. Of the 621 respondents, 559 (90%) were from undergraduate programs, and 62 (10%) were enrolled for their master's degree. For 375 (60%) respondents the length of the online classes was 8 weeks and for the rest it was 12 weeks. Only 245 (40%) reported to have undergone classes for 5 subjects, while the rest had between 6 and 9 subjects.

Presence	Overall mean score	Pooled SD score
Teaching	4.94	1.01
Social	4.90	1.26
Cognitive	5.13	1.14

Table 1 - Overall agreeableness score of the three presences.

The overall mean and pooled standard deviation score confirm that the respondents consider the interdependent elements of CoI as applicable to hospitality education (mean score of 5 indicates 'agree' on the scale of 1-7).

3.1 Measurement Model

Confirmatory factor analysis (CFA) was used to test the extent to which the measured variables represent the constructs consistently. It was conducted to specify the relationships between 40 observed indicators and the 5 factors viz., teaching presence (TP) (12 items), social presence (SP) (8 items), cognitive presence (CP) (10 items), course design (DE) (5 items), and satisfaction (SAT) (4 items). The final model fit indices showed good fit with $\chi 2 = 2470.278$, Degrees of Freedom (df) = 611, $\chi 2/df = 4.043$, $p<0.001$, CFI= 0.914, RMSEA= 0.070 proving that the indicators support good model fit. To check the convergent validity, AVE (Average Variance Extracted) for each of the construct was computed and the respective values were found to be in accordance with the threshold value of 0.50 (Anderson & Gerbing, 1988; (Hair et al. 2010).

2.2 Structural Model Testing

The hypotheses of the conceptual model were tested using Structural Equation Model using IBM AMOS 25. Given the large sample size, the indices obtained were, $\chi^2/df = 3.982$, $p<0.001$, IFI= 0.916, TLI= 0.908, CFI= 0.916, RMSEA= 0.069, which showed that the structural model fit the data sets adequately (Hair et al., 2014).

Table 2 illustrates the results of the hypothesized relationships of the structural model. Hypotheses 1a and 1b suggested that teaching presence (1a) and social presence (1b) have a significant positive relationship with student satisfaction. Results showed that both these hypotheses (1a $\beta= 0.227$, t value= 4.474, $p<0.001$; 1b $\beta= 0.202$, t value= 4.338, $p<0.001$) were supported. On the contrary, hypothesis 1c ($\beta= 0.009$, t value= 0.136, $p>0.05$) was not supported. Hypotheses 2a to 2c suggested that teaching presence, social presence and cognitive presence positively influences student satisfaction. Present results supported these hypotheses (2a $\beta= 0.355$, t value= 6.828, $p<0.001$; 2b $\beta= 0.180$, t value- 3.719, $p<0.001$and 2c $\beta= 0.397$, t value= 5.836, $p<0.001$). Hypothesis 4, which suggested that there is a significant positive relationship between course design and student satisfaction, was also supported ($\beta=0.553$, t value= 9.565, $p<0.001$).

4.3 Mediation analysis

We examined the mediating effect of course design on the relationship between teaching presence, social presence, cognitive presence, and student satisfaction. The indirect effect was assessed using bootstrapping method with PROCESS macro 3.4 - Model 4 (Hayes, 2018). When we test the effect of TP (through course design) on student satisfaction, the covariance between SP and CP is controlled, so that there is no influence of SP and CP on the relationship between TP and Student Satisfaction through CD. The indirect effect is measured using both bootstrapping method and Sobel's test. The hypotheses 3a to 3c suggest that the effect of TP, SP, and CP on student satisfaction is partially mediated by the course design after controlling for the covariates (hypothesis 3a: $\beta_{TP\rightarrow DE\rightarrow SA;}$ 3b: $\beta_{SP\rightarrow DE\rightarrow SA}$; 3c: $\beta_{CP\rightarrow DE\rightarrow SA}$). There exists only a partial mediation for the three hypotheses as independent variable (TP, SP, CP) has both direct and indirect effect on dependent variable (student satisfaction). The results of both bootstrapping method and Sobel's test (Table 3) for hypothesis 3a ($\beta_{TP\rightarrow DE\rightarrow SA} = 0.162$, 95% CI= 0.108, 0.217; Z= 6.86; $p<0.001$), 3b ($\beta_{SP\rightarrow DE\rightarrow SA} = 0.09$, 95% CI= 0.046, 0.142; Z= 5.36, $p<0.001$), and 3c ($\beta_{CP\rightarrow DE\rightarrow SA} = 0.204$, 95% CI= 0.135. 0.279; Z= 7.27, $p<0.001$) suggested that the course design has a significant association between CoI and student satisfaction.

4. Discussion and Implication

CoI is a popular framework for researchers and academic practitioners in distance education (Maddrell et al., 2018), but its applicability in emergency remote teaching remains under-researched. While discussing the post-pandemic pedagogy, Murphy (2020) mentioned about the extension of emergency e-Learning to avoid the possible second wave of COVID-19 and stressed the importance of normalization of online education. Currently, the temporary shift of instructional delivery may have disrupted the educational ecosystem, but in the long run it is likely to become a viable solution to

Constructs and Indicators	Factor loadings	AVE	CR
Teaching Presence		**0.599**	**0.942**
TP7 The instructor helped to keep course participants engaged and participating in productive dialogue.	0.827		
TP9 The instructor encouraged course participants to explore new concepts in this course	0.825		
TP8 The instructor helped keep the course participants on task in a way that helped me to learn	0.811		
TP10 Instructor actions reinforced the development of a sense of community among course participants.	0.81		
TP6 The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.	0.808		
TP5 The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn	0.799		
TP11 The instructor helped to focus discussion on relevant issues in a way that helped me to learn.	0.797		
TP3 The instructor provided clear instructions on how to participate in course learning activities.	0.726		
TP2 The instructor communicated important course goals	0.717		
TP1 The instructor clearly communicated important course topics	0.687		
TP12 The instructor provided feedback that helped me understand my strengths and weaknesses relative to the course's goals and objectives	0.684		
Social Presence		**0.656**	**0.93**
SP4 I felt comfortable conversing through the online medium.	0.876		
SP5 I felt comfortable participating in the course discussions.	0.871		
SP3 Online or web-based communication is an excellent medium for social interaction.	0.802		
SP8 I felt that my point of view was acknowledged by other course participants	0.799		
SP6 I felt comfortable interacting with other course participants	0.794		
SP9 Online discussions help me to develop a sense of collaboration	0.792		
SP2 I was able to form distinct impressions of some course participants	0.728		
Cognitive Presence		**0.647**	**0.948**
CP7 Combining new information helped me answer questions raised in course activities.	0.866		
CP4 I utilized a variety of information sources to explore problems posed in this course.	0.841		
CP8 Learning activities helped me construct explanations/ solutions.	0.832		
CP2 Course activities piqued my curiosity.	0.82		
CP3 I felt motivated to explore content related questions.	0.813		
CP9 Reflection on course content and discussions helped me understand fundamental concepts in this class.	0.811		
CP5 Brainstorming and finding relevant information helped me resolve content related questions	0.802		
CP10 I can describe ways to test and apply the knowledge created in this course.	0.788		
CP12 I can apply the knowledge created in this course to my work or other non-class related activities.	0.771		
CP1 Problems posed increased my interest in course issues.	0.696		
Course Design		**0.71**	**0.924**
DE2 The online learning materials in this course are designed to really try to make topics interesting to students	0.877		
DE4 The online learning materials provided in this course are extremely good at explaining things.	0.856		
DE3 The design of the website/platform (online experiences in this course) helped my learning.	0.842		
DE5 The design of the web platform in this course made me want to explore the issues more	0.827		
DE1 The online activities are designed to get the best out of students	0.81		
Student Satisfaction		**0.662**	**0.887**
SA2 I am satisfied with the instructional style	0.868		
SA3 I am satisfied with the learning content and course structure	0.86		
SA1 Overall, online learning has been successful and I enjoyed the online course.	0.787		
SA4 I am satisfied with the instructors/teachers	0.734		

Table 2 - Confirmatory Factor Analysis.

Standardized Hypothesized relationship	Standardized estimates	t value	Decision
Hypothesis1a: Teaching Presence → Learner Satisfaction	0.227	4.474**	Supported
Hypothesis 1b: Social Presence → Learner Satisfaction	0.202	4.338**	Supported
Hypothesis 1c: Cognitive Presence → Learner Satisfaction	0.009	0.136 ns	Not Supported
Hypothesis 2a: Teaching Presence → Course Design	0.355	6.828**	Supported
Hypothesis 2b: Social Presence → Course Design	0.180	3.719**	Supported
Hypothesis 2c: Cognitive Presence → Course Design	0.397	5.836**	Supported
Hypothesis 4: Course Design → Learner Satisfaction	0.553	9.565**	Supported

Note: ns= not significant $R^2_{\text{Course Design}}$= 0.75; $R^2_{\text{Learner Satisfaction}}$= 0.84
**p< 0.001

Table 3 - Standardized Regression Weights for Structural Model.

integrate blended learning approaches, even for a skill oriented profession like hospitality. In higher education institutions, blended learning may support improving the quality of F2F learning by moving the content delivery online and in-person sessions on active learning (Bowen, 2012; Murphy, 2020).

At the variable level, the highest mean score of the three independent variables was CP (M=5.13, SD=1.14) followed by TP (M=4.94, SD=1.01) and SP (M=4.90, SD=1.26). As a first step in the analysis, the mean scores of individual items are important indicators of student satisfaction leaving aside the necessity to confirm the theory presented in the CoI framework. However, during further analysis, though precisely important, certain items with high mean scores, such as TP4 (mean = 5.84), TP13 (mean=5.24), SP1 (mean =5.06), CP6 (mean=5.27), and CP11(mean=5.15) did not load. Likewise, one of the important item in course design DE6 (the course used different categories of media, including power point presentations, lecture notes, audio clips, video clips, website links, etc.) (5.73)) and SS6 (I am satisfied with the continuous evaluations and final exam) (5.00) did not load. The internal structure of the scales used may be inconsistent in the present context, nonetheless, we interpret that they are critical for the optimal design of e-Learning environments.

Online education is a method of teaching-learning carefully planned and deliberately designed to be remote and distance (Hodges, et al., 2020; Uopeople.edu., 2020) that uses combination of technologies. Though the origin of blended learning lies in distance learning, it combines computer medicated instruction with traditional F2F instruction through amalgamation of technologies, models of teaching, pedagogies, and styles of learning (Bryan, & Volchenkova, 2016; Friesen, 2012; Graham, 2006). Hence, the temporary shift to alternate delivery mode adopted due to crisis circumstance is neither comparable with full time online education nor blended learning. However, in prior research, the application of CoI framework in the context of distance education or online courses has found mixed results, with some studies suggesting a positive relationship between TP and satisfaction (Kucuk, & Richardson, 2019; Khalid & Quick, 2016), SP and satisfaction (Akyol & Garrison, 2011; Arbaugh, 2008;), and CP and satisfaction (Kucuk, & Richardson, 2019; Kang et al., 2014; Hosler & Arend, 2012), and course structure on student satisfaction (Harsasi & Sutawijaya, 2018; Ellis et al., 2009;), except a few that have not found any significant relationship between SP and satisfaction (Joo, Lim, & Kim, 2011; So & Brush, 2008). Though the context is otherwise, the results are consistent with few of the aforementioned studies. In our study, the elements of CoI showed significant positive relation with course design items. The study shows the importance of course design, with 84% of the variations in student satisfaction being explained by course design (this includes the effect of TP, SP, and CP, collectively) and had a beta value as high as 0.533. Overall, the results showed that the proposed model fits the observed relationships except for CP, which did not show significant relationship with satisfaction. Further, TP was found to be the major determinant of satisfaction. We can infer that the students are satisfied when the teaching presence is strong. Contrary to expectation, SP was not a major predictor of satisfaction. Possible explanation may be that the students are not accustomed to online lessons and are a cohesive group studying together in the campus. The study intertwines CoI and course design as prerequisite for student satisfaction. It is a novel attempt and the results implied partial mediation by course design in the relationship between CoI and satisfaction. Largely, results indicate that we are successful in meeting the expectation of students in terms of curriculum delivery. Some of the variations in the present findings may be due to the polarity in the observations of students, as their inclination is vis-à-vis experiential value of the courses undertaken.

The present results suggest that hospitality students perceive the CoI framework may apply to hospitality education, though explicit cognizance of CoI is low among the respondents. The outcomes of this study make significant theoretical and practical contributions to the key stakeholders of higher education and present avenues for further research. First, it is among the primary attempts to use CoI and course design as

theoretical foundation and assess the framework to explain students' satisfaction in a remote teaching context. In doing so, it explores the role of course design as mediator in the proposed relationship. Second, in a collaborative learning community, it enables university professors to enhance the quality of remote teaching by re-designing the structure of learning activities. Third, findings offer teachers with useful insights on increased focus towards course design dimensions, as it has the strongest association with satisfaction. Fourth, this is the first-ever study concerning the perceptions of Indian hospitality students of remote teaching, using the CoI framework. Lastly, an important issue that must not be neglected, is the overall learning experience of students that can be enhanced only through concerted efforts by the administrators and teachers. In this sense, each and every variable in the scales used become an important indicator of success to assist students to have a meaningful learning experience.

5. Limitations and Conclusion

As this is a pioneering study in the emerging field, it has just opened the doors to extensive research opportunities. In this pilot study, even though the sample size is large enough, the sampling diversity was very limited, as the students from only one institute were considered.

In a hospitality program, on an average a student studies six theory courses in a semester. He/she has to attend 185 + hours of class room teaching and involve in 200+ hours of self-learning. Teaching involves lecture sessions, videos, quiz, case studies, and demonstrations delivered online through Microsoft Teams, MS Forms and Google Learning tools by the module leaders. Self-Learning comprises listening to podcasts, creating blogs and Vlogs, e- assignments, and undergoing subject specific MOOC's. Therefore, in future studies, the exploration of association between overall time spent in online learning and student satisfaction would provide interesting insights into higher order learning along the three domains of CoI along with identification of discipline based differences in student perceptions of elements of CoI. Generalizability of the findings to diverse campus-based courses need to be tested as this is the first attempt to administer this scale to hospitality students. As a new topic of study, it is narrowly focussed on course design items, based on exterior delivery of content, and the quality of learning activities are not yet addressed. The study also does not capture the completeness of learning where many other contextual variables may be responsible for learner satisfaction. Moreover, we run primarily a campus-based program and adoption of remote teaching was only an emergency measure during COVID-19 pandemic, to ensure completion of the course. Future studies may need to incorporate other factors, such as different dimensions of social presence, emotional presence, components of engagement, discipline-specific course design elements, perceived learning, inclusion of moderators, and student motivation.

According to Kozan and Richardson (2014), teaching presence lead to enhanced social presence and cognitive presence. Our study results exhibited significant relationship among TP and satisfaction and we assume that sooner or later as we continue remote teaching, the pairwise relationships may become stronger with time and experience. As suggested by Richardson, Maeda, and Caskurlu (2017) and Kozan and Caskurlu (2018), SP measures may have to be revisited, and CoI framework may need to be refined with more theoretical and methodological considerations to make it relevant to ERT environment. Assuredly there is scope to improve the awareness about CoI in ERT because it is important to assess the efficacy of this temporary solution (Hodges et al., 2020) as a measure of learner success and satisfaction. Setting aside conventional thinking on teaching, learning, and assessment, COVID-19 offered an opportunity to reimagine higher education and develop coherent digital strategies to deal with eventualities in the future. We believe that the proposed model may serve as a guide to possible future studies to explore the value of CoI framework as a model of learning process in remote teaching.

References

Akyol, Z., & Garrison, D.R. (2011), Learning and Satisfaction in Online Communities of Inquiry, Student Satisfaction and Learning Outcomes in E-Learning: An Introduction to Empirical Research, USA, IGI Global, http//doi.org/10.4018/978-1-60960-615-2.ch002

Alhelalat, J. A. (2015), Hospitality and non-hospitality graduate skills between education and industry, Journal of Business Studies Quarterly, 6(4), 46-55.

Alqurashi, E. (2019), Predicting student satisfaction and perceived learning within online learning environments, Distance Education, 40(1), 133-148, https//doi.org/ 10.1080/01587919.2018.1553562

Amemado D., Manca S. (2017), Learning from decades of online distance education: MOOCs and the Community of Inquiry framework, Journal of e-Learning and Knowledge Society, 13(2), 21-32.

Anderson, J., & Gerbing, D. (1988), Structural equation modelling in practice: A review and recommended two-step approach, Psychological Bulletin, 103 (3).

Annamalai, N. (2017), An investigation into the Community of Inquiry model in the Malaysian ESL learners' context, Interactive Technology and Smart Education, 14(3), 246-263, https://doi.org/10.1108/ITSE-07-2016-0021

Arbaugh, J. B. (2008), Does the community of inquiry framework predict outcomes in online MBA

courses?, International Review of Research in Open and Distance Learning, 9, 1–21.

Bage, L. (2018), Satisfaction with online learning options in the insurance industry: Does mindfulness play a role [Unpublished doctoral dissertation], USA, University of Pennsylvania

Bao, W. (2020), COVID-19 and online teaching in higher education: A case study of Peking University. Human Behaviour & Emerging Technology, 2, 113–115. URL: wileyonlinelibrary.com/journal/hbe2 © 2020 Wiley Periodicals LLC 113

Biggs, J.B. (2005), Aligning teaching for constructing learning, URL: http://www.heacademy.ac.uk/embedded_object.asp?id=21686&filename=Biggs (accessed on 15th July 2020)

Bowen, J. A. (2012), Teaching naked: How moving technology out of your college classroom will improve student learning, Jossey-Bass.

Bryan, A., & Volchenkova, K.N. (2016), Blended learning: Definition, models, implications for higher education. URL: https://www.researchgate.net/publication/303815166_BLENDED_LEARNING_DEFINITION_MODELS_IMPLICATIONS_FOR_HIGHER_EDUCATION (accessed 26th November 2020)

Callaway, S.K. (2012). Implications of online learning: Measuring student satisfaction and learning for online and traditional students, Insights to a Changing World. URL: www.franklinpublishing.net (accessed on 16th July 2020)

Castellanos-Reyes, D. (2020), 20 Years of the Community of Inquiry Framework, Tech Trends, 64, 557–560, https://doi.org/10.1007/s11528-020-00491-7

Choudhary, R. (2020), COVID-19 Pandemic: Impact and strategies for education sector in India. Economic Times. URL: https://government.economictimes.indiatimes.com/news/education/covid-19-pandemic-impact-and-strategies-for-education-sector-in-india/75173099 (accessed 27th November 2020)

Cohan, D.J. (2020), What do we need to teach now?, Inside Higher Ed. URL: https://www.insidehighered.com/blogs/just-visiting/not-experiment (accessed 18th July 2020)

Cole, M.T., Shelley, D.J., & Swartz, L.B. (2013a). Online instruction, e-learning, and student satisfaction: A three-year study. URL: file:///C:/Users/Administrator/Desktop/e-learning/online%20instruction%20and%20student%20satisfaction.pdf (accessed on 15th July, 2020)

Cole, M.T., Shelley, D.J., & Swartz, L.B. (2013b), Academic integrity and student satisfaction in an online environment, Cases on online learning communities and beyond: Investigations and applications. Hershey, PA.: IGI Global.

Davidson, C. N., & Goldberg, D. T. (2009), The future of learning institutions in a digital age, Cambridge, MA: MIT Press.

Eachempati, P. & Ramnarayan, K. (2020), Covido pedago-phobia, Medical Education, 678-680, https://doi.org/10.1111/medu.14257

Ellis, R.A., Ginns, P., & Piggott, L. (2009), E-learning in higher education: some key aspects and their relationship to approaches to study, Higher Education Research & Development, 28(3), 303-318. https//doi.org/10.1080/0729436090283999

Friesen, N. (2012). Report: Defining Blended Learning. URL: https://www.normfriesen.info/papers/Defining_Blended_Learning_NF.pdf (accessed 30th November 2020)

Garrison, D. R., Anderson, T., & Archer, W. (2000), Critical inquiry in a text-based environment: Computer conferencing in higher education model, The Internet and Higher Education, 2(2-3), 87-105.

Golden, C. (2020), Remote teaching: The glass half-full. EDUCAUSE Review. URL: https://er.educause.edu/blogs/2020/3/remote-teaching-the-glass-half-full (accessed 10th July 2020)

Goodman, R. J., Jr., & Sprague, L.G. (1991), The Future of Hospitality Education: Meeting the Industry's, Cornell Hotel and Restaurant Administration Quarterly, 32(2), 66-69.

Govindarajan, V., & Srivastava, A. (2020), What the shift to virtual learning could mean for the future of higher ed. Harvard Business Review, URL: https://hbr.org/2020/03/what-the-shift-to-virtual-learning-could-mean-for-the-future-of-higher-ed (accessed 15th July, 2020)

Graham C.R. (2006), Blended Learning Systems: Definition, Current Trends, and Future Directions. The Handbook of Blended Learning: Global Perspectives, Local Designs. San Fran-cisco: Pfeiffer Publ.

Gross, M.J. & Manoharan, A. (2016), The balance of liberal and vocational values in hospitality higher education: Voices of graduates, Journal of Hospitality & Tourism Education, 28(1), 44-57.

Gursoy, D., Rahman, I. and Swanger, N. A. (2012), Industry's expectations from hospitality schools: What has changed?, Journal of Hospitality and Tourism Education, 24 (4), 32-42.

Gursoy, D., & Swanger, N. (2005), An industry driven model of hospitality curriculum for programs housed in accredited colleges of business: Part II, Journal of Hospitality & Tourism Education, 17(2), 46-56, htto//doi.org/ 10.1080/10963758.2005.10696824

Gutiérrez-Santiuste E., Gallego-Arrufat, M.J., & Simone A. (2016), Barriers in computer-mediated communication: typology and evolution over time, Journal of e-Learning and Knowledge Society, 12 (1), 107-119.

Hair, J. F., William, C.B., Babin, B. J., & Anderson, R. E. (2010). Multivariate Data Analysis, In Pearson New International Edition (7th ed.), London, Pearson Prentice Hall.

Harrell, K. B., & Wendt, J. L. (2019), The impact of blended learning on community of inquiry and perceived learning among high school learners enrolled in a public charter school, Journal of Research on Technology in Education, 51(3), 259–272, https://doi.org/10.1080/ 15391523.2019.1590167.

Harsasi, M., & Sutawijaya, A. (2018), Determinants in student satisfaction in online tutorial: A study of a distance education institution, Turkish Online Journal of Distance Education, 89-99.

Hilliard, L. P., & Stewart, M.K. (2019), Time well spent: Creating a community of inquiry in blended first-year writing courses, The Internet and Higher Education, 14(1), 11-24.

Hodges, S.M., Lockee, B., Trust, T., & Bond, A. (March 27, 2020). The Difference Between Emergency Remote Teaching and Online. URL: https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and onlinelearning#:~:text=In%20contrast%20to%20experiences%20that,mode%20due%20to%20crisis%20circumstances (accessed on 16th July 2020)

Hosler, K. A., & Arend, B. D. (2012), The importance of course design, feedback, and facilitation: Student perceptions of the relationship between teaching presence and cognitive presence, Educational Media International, 49(3), 217–229.

Jan, S., Vlachopoulos, P., & Parsell, M. (2019), Social network analysis and online learning in communities in higher education: A systematic literature review, Online Learning, 23(1), 249–265, https://doi. org/10.24059/oljv23i1.1398.

Joo, Y. J., Lim, K. Y., & Kim, E. K. (2011), Online university students' satisfaction and persistence: Examining perceived level of presence, usefulness and ease of use as predictors in a structural model, Computers & Education, 57(2), 1654-1664, https://doi.org/10.1016/j.compedu.2011.02.008

Joksimović, S. Kovanović, ., Skrypnyk, O., Gašević, D. Dawson, S. & Siemens, G. (2015), The history and state of online learning. URL: file:///C:/Users/Administrator/Downloads/Joksimovietal.-2015-Thehistoryandstateofonlinelearning.pdf (accessed 30th November 2020)

Kang, M., Liew, B.T., Kim, J., & Park, Y. (2014), Learning Presence as a Predictor of Achievement and Satisfaction in Online Learning Environments, International Journal on E-Learning, 13(2), 193-208.

Khalid, M.N. & Quick, D. (2016), Teaching presence influencing online students' course satisfaction at an institution of higher education, International Education Studies, 9(3), 62– 70.

Kozan, K., & Richardson, J. C. (2014), Interrelationships between and among social, teaching, and cognitive presence, The Internet and Higher Education, 21, 68–73, http//do/ 10.1016/j.iheduc.2013.10.007

Kozan, K., & Caskurlu, S. (2018), On the Nth presence for the Community of Inquiry framework, Computers and Education, 122, 104–118.

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

Ladki, S. M. (1993), Hospitality education: the identity struggle, International Journal of Hospitality Management, 12(3), 243-251, https://doi.org/10.1016/0278-4319(93)90024-4

Lam, J. Y. C., (2015), Examining student experience of blended learning from the perspective of the Community of Inquiry Framework, Asian Association of Open Universities Journal, 10(2), 81–99.

Lashley, C. (2000), In search of hospitality: Towards a theoretical framework, International Journal of Hospitality Management, 19(1), 3-15, http//doi.org/ 10.1016/S0278-4319(99)00035-3

Lee, P. C., Sun, S., Law, R., & Lee, A. H., (2016), Educational technology in hospitality management programs: Adoption and expectations, Journal of Teaching in Travel & Tourism, 16(2), 116-142. http//Doi.org/10.1080/15313220.2015.1121795

Maddrell, J.A., Morrison, G.R., & Watson, G.S. (2017), Presence and learning in a community of inquiry, Distance Education, 38(2), 245-258, https//doi.org/ 10.1080/01587919.2017.1322062

Micsky, T., & Foels, L. (2019), Community of Inquiry (CoI): A Framework for Social Work Distance Educators, Journal of Teaching in Social Work, 39

(4-5), 293-307, http//doi.org/ 10.1080/08841233.2019.1642976

Murphy, M. P. A. (2020), COVID-19 and emergency eLearning: Consequences of the securitization of higher education for post-pandemic pedagogy, Contemporary Security Policy, 1-14, http//doi.org/ 10.1080/13523260.2020.1761749.

OECD (2020), Supporting the continuation of teaching and learning during the COVID-19 Pandemic Annotated resources for online learning. URL: http://www.oecd.org/education/Supporting-the-continuation-of-teaching-and-learning-during-the-COVID-19-pandemic.pdf (accessed 10th July 2020)

Ottenbacher, M., Harrington, R., & Parsa, H. G. (2015), Defining the hospitality discipline: A discussion of pedagogical and research implications, Journal of Hospitality and Tourism Research, 39, 373-400.

Pillai, R., & Sivathanu, B. (2019), An empirical study on the online learning experience of MOOCs: Indian students' perspective, International Journal of Educational Management, 3, 586-609, https://doi.org/10.1108/ijem-01-2019-0025

Richardson, J. C., Maeda, Y., Lv, J., & Caskurlu, S. (2017), Social presence in relation to students' satisfaction and learning in the online environment: A meta-analysis, Computers in Human Behaviour, 71, 402–417.

Sisson, L. G., & Adams, A. R. (2013), Essential hospitality management competencies: The importance of soft skills, Journal of Hospitality & Tourism Education, 25(3), 131-145, http//doi.org/ 10.1080/10963758.2013.826975

Smadi, O., Parker, S., Gillham, D., & Muller, A. (2109), The applicability of community of inquiry framework to online nursing education: A cross-sectional study, Nurse Education in Practice, 34, 17-24.

So, H. J., & Brush, T. (2008), Student perceptions of collaborative learning, social presence and satisfaction in a blended learning environment: Relationships and critical factors, Computers & Education 51(1), 318-336

Strong, R., Irby, T.L., Wynn, J. T., & McClure, M.M. (2012), Investigating students' satisfaction with relearning courses: The effect of learning environment and social presence, Journal of Agricultural Education, 53, 98-110.

Sun, S., Lee, P., Lee, A., Law, R. (2016), Perception of attributes and readiness for educational technology: Hospitality management students' perspectives, Journal of Hospitality & Tourism Education, 28(3), 142 154, http//doi.org/10.1080/10963758.2016.1189832

Swan, K. P., Richardson, J.C., 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, URL: www.e-mentor.edu.pl/eng

Tobin, T.J. (2020), Now is not the time to assess online learning, The Chronicle of Higher Education, URL: https://www.chronicle.com/article/Now-Is-Not-the-Time-to-Assess/248343 (accessed 18th Jul 2020)

UNESCO. (2020), COVID-19 educational disruption and response. URL: https://en.unesco.org/themes/education-emergencies/ coronavirus-school-closures (accessed 15th July 2020)

University of the People. (2020), Emergency Remote Teaching Vs. Online Learning: A Comparison. URL: https://www.uopeople.edu/blog/emergency-remote-teaching-vs-online-learning/ (accessed 30th November 2020)

Wadia, L.C. (2020). Graduating from emergency remote teaching to online higher education in India. URL: https://www.orfonline.org/expert-speak/graduating-emergency-remote-teaching-online-higher-education-india-67279/ (accessed 28th July 2020).

Wei, H.C., & Chou, C.(2020), Online learning performance and satisfaction: do perceptions and readiness matter?, Distance Education, http//doi.org/ 10.1080/01587919.2020.1724768

Zimmerman, J. (2020), Coronavirus and the great online-learning experiment, The Chronicle of Higher Education, URL: https://www.chronicle.com/article/Coronavirusthe-Great/248216 (accessed 18th July 2020)

Zopiatis, A., Theodosiou, P., & Constanti, P. (2014), Quality and satisfaction with culinary education: Evidence from Cyprus, Journal of Hospitality & Tourism Education, 26 (2), 87–98, http//doi.org/10.1080/10963758.2014.900383