

SOCIAL PRESENCE, COLLABORATION, ACADEMIC PERFORMANCE, AND STUDENT AND FACULTY SATISFACTIONS IN COVID-19-INDUCED ONLINE DISTANCE LEARNING

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ABSTRACT

This study investigated the existing levels of social presence, collaboration, academic performance, and student and faculty satisfactions and their relationships in the online distance learning (ODL) environment during the COVID-19 pandemic. Three hundred ninety-seven (397) students (male, $n = 134$; female, $n = 263$) and 253 faculty (male, $n = 112$; female, $n = 141$) from eight higher education institutions in Dumaguete City, Philippines, participated in the study. Data from the respondents were collected through online questionnaires and analyzed using descriptive and correlational statistics. The results revealed that the students gathered high levels of social presence ($wx = 3.57$, $SD = 0.61$), collaboration ($wx = 3.97$, $SD = 0.55$), and student satisfaction ($wx = 3.56$; $SD = 0.67$) in ODL. Consequently, moderate levels of academic performance ($wx = 3.26$, $SD = 0.53$) and faculty satisfaction ($wx = 3.10$, $SD = 0.39$) were perceived by the students and faculty, respectively. Furthermore, Spearman's rho correlation found that there were statistically significant relationships between social presence and collaboration ($r = 0.56$, $p = <0.000001$), collaboration and student satisfaction ($r = 0.57$, $p = <0.000001$), and social presence and student satisfaction ($r = 0.70$, $p = 0.0000005$). Moreover, student satisfaction and academic performance had a strong positive correlation ($r = 0.80$, $p = <0.000001$). Lastly, through the Mann-Whitney U test, faculty satisfaction did not have any significant relationship with student satisfaction ($z = 9.23$, $p = <0.0001$) and academic performance ($z = 4.81$, $p = <0.0001$).

Keywords: Distance Learning, Online Learning, Higher Education, COVID-19, Philippines

INTRODUCTION

In the spectrum of education, the high-speed link between educational instruction and the advancing information and communication technologies opened new ways for content delivery, knowledge and skill acquisition, and personal development. In contemporary application, however, this coalescence between instruction and emerging technologies somehow fell a dash short in accomplishing its set objectives, such as high-output student academic performance, high-functioning communication and collaboration lines, and noteworthy teaching and learning experiences within the academic community (Harris et al., 2016). Educational institutions viewed distance learning as a means to deliver education to students who were unable to attend classes due time and distance constraints and other viable grounds (Gilbert, 2013). Developing countries were promoting the employment of distance learning as a potential solution for an increasing student enrollment and the subsequent shortage of physical infrastructural space (Musingafi, 2015).

Consequently, by the last quarter of 2019, the proliferation of the deadly coronavirus diseases (COVID-19) that led to a global pandemic inadvertently forced schools and universities to temporarily close their gates. Looking at the school format, such an environment was susceptible to high rates of COVID-19 transmission, and thus, halting many academic operations such as face-to-face instruction and organizational conferences had become necessary measures to ensure public health (OCHA, 2020).

During the conduct of the study, with the spread of the novel COVID-19 in the Philippines, most HEIs in the country had migrated to distance learning modality as a way to continue their academic operations. With this seemingly abrupt change in learning modality came the difficulties that tagged along, such as Internet connectivity, electric power interruptions, unsatisfactory learning resources, unclear learning contents, unideal learning environments, limited teacher presence, scarce peer communication, financial problems, and physical and mental health struggles (Rotas & Cahapay, 2020). The challenges were

seen as viable inputs to be considered for further enhancement of current educational processes present in Philippine distance learning. Moreover, several interrelated learning barriers had risen as students try to adapt to the new learning modality. Difficulty in adjusting to new learning styles, conflicting responsibilities at home and online school, and inadequate communication between teachers and students were the most frequently encountered obstacles (Baticulon et al., 2021). These connected roadblocks would require effective implementation of student-centered interventions and institutional adjustments to clear the way for improved learning instruction amid the pandemic and beyond.

Taking a closer look at the Philippine map, right at the center was the province of Negros Oriental, located in the Central Visayas Region. While the province was continually subjected to community quarantines, local higher education institutions (HEIs) had been subsequently directed to employ distance learning modalities to continue their academic operations. The demand for the swift

conversion from conventional face-to-face instruction to ODL in HEIs was completely unprecedented. This movement had never transpired prior to the first quarter of 2020. Research related to this educational interference of this scale and impact was exceedingly limited (Ross-Hain, 2020). Nonetheless, while relevant research was in scarcity, the opportunities to acquire and build knowledge from this event were numerous. Understanding the experiences of students and faculty as they immersed in the modified content, delivery, and assessment can assist HEIs to reflect on the existing conditions in ODL.

The current study was designed to explore the relationships of the factors that influenced the ODL environment among HEIs during the COVID-19 pandemic. Lorenz et al. (2013) investigated the correlation of students' participation levels and privacy awareness. The results showed that the students' predisposition to participate and privacy awareness in ODL were significantly correlated. This suggested that high levels of privacy awareness were needed to be reassured for students to be protected from potential

threats to generate positive results in ODL (Bienkowski, 2017; Huang et al., 2020). Online communication mechanisms such as videoconferences, chat rooms, and discussion boards were part of the new generation of web-based application (Silvia & Iryna, 2012). A wide variety of approaches can be applied to collaborative learning, depending on the time devoted to the accomplishment of the group work. Face-to-face interactions or computer-mediated communications were some of the activities that can be employed during collaborative sessions (Thanh et al., 2008; Van den Bossche et al., 2011; Slavin, 2014; Zambrano, et al., 2019). Nonetheless, regardless of the teaching approach implemented, collaboration among learners composed an integral factor in learning.

The concept of satisfaction had been recently integrated to the context of education (Johnston et al., 2005; Styron, 2010; Asaduzzaman et al., 2013). Student satisfaction was viewed the as the students' subjective evaluation of the different experiences and outputs in the onset of the learning process (Gray & DiLoreto, 2015). Student satisfaction was then built by the

continued experiences of the students during their academic life (Gruber et al., 2010). The self-efficacy of instructors regarding technological use, content knowledge, and course development reflects on the students' perceptions toward the teachers (Boca, 2021). The immergence of new technologies had evolved the face of online education (Elumalai, 2020). In this era of technological innovations, educational institutions had now reached the online platform as a viable mode of learning delivery. With this development, academic institutions were rethinking on how instruction was being delivered brought by this shift in pedagogical medium. Stansfield et al. (2004) identified a number of factors that affected students' academic performance in online learning programs. The affective learning outcomes of students in online instruction can be deepened through technological transformations that facilitated enriched and adaptively guided learning and interaction (Näykki et al., 2019). These affective factors were both educational and social in nature, including self-efficacy, flexibility of access to online learning materials, student-

centered pacing of instruction, and assessments used. Nonetheless, they recommended that while online learning materials facilitated group works and collaborative activities, students were encouraged to create a “community of learners” within the online platform (Viet Anh, 2017).

The worldwide COVID-19 pandemic had an immense impact on every facet of society, and research centered on its impact to education was just beginning to emerge (Ross-Hain, 2020). The directions for educational research were abundant. To take into consideration student and faculty experiences in ODL would promote the construction of relevant information toward building a change-responsive online learning environment. Concentrating on the components of ODL and understanding and analyzing their relationships will lead to improved learning delivery and outcomes in the academic community. Putting emphasis on these concepts, specifically, the research sought to answer the following questions:

1. What are the perceived levels of (a) social presence, collaboration, student satisfaction, and academic

performance among the students and (b) teaching satisfaction among the faculty?

2. Are higher levels of social presence connected with the perceived levels of collaboration among students?
3. Are higher levels of (a) collaboration and (b) social presence linked with the perceived levels of student satisfaction?
4. Are higher levels of student satisfaction associated with the perceived levels of academic performance among students?
5. Do higher levels of faculty satisfaction affect (a) student satisfaction and (b) academic performance?

Given the new educational climate, literature on the significant indicators of successful ODL were scarce (Subedi et al., 2020; Murgatroid, 2020). In order to be responsive to the educational changes brought by the move from conventional to virtual learning, a substantial body of work was desired in order for HEIs to establish indicators that impacted the expected outcomes of teaching and learning

instruction in ODL. Emerging challenges in the expanding ring of twenty-first-century ODL warrant research that highlighted the influence of technological applications, pedagogical approaches, and existing academic processes to the academic community (Doucet et al., 2020). Additionally, this further supported the need for suitable and relevant information necessary to provide knowledge on the utilization of online-enabled applications, resources, and materials as tools for the promotion of meaningful academic experiences for students. With these propositions, it was of great interest to explore certain components of the online learning environment and the relationships within that contributed to the understanding on how to improve the quality of instructional delivery and outcomes in the virtual academic community.

REVIEW OF RELATED LITERATURES

The current study was designed to explore the relationships of the factors that influenced the ODL environment among HEIs during the COVID-19. Social presence theory was first introduced by social psychologists Short, Williams, and Christie (1976). Their

concept of social presence was anchored on preceding research on interpersonal communication between dyads. The trio defined social presence as the “degree of salience of the person in the interaction and the consequent salience of the interpersonal relationships.” Online communication mechanisms such as videoconferences, chat rooms, and discussion boards were part of the new generation of web-based application (Silvia & Iryna, 2012). Lorenz et al. (2013) investigated the correlation of students’ participation levels and privacy awareness. The results showed that the students’ predisposition to participate and privacy awareness in ODL were significantly correlated. This suggested that high levels of privacy awareness were needed to be reassured for students to be protected from potential threats to generate positive results in ODL (Bienkowski, 2017; Huang et al., 2020).

A wide variety of approaches can be applied to collaborative learning, depending on the time devoted to the accomplishment of the group work. Face-to-face interactions or computer-mediated communications were some of the activities that can be employed during collaborative sessions (Thanh et al.,

2008; Van den Bossche et al., 2011; Slavin, 2014; Zambrano, et al., 2019). Nonetheless, regardless of the teaching approach implemented, collaboration among learners composed an integral factor in learning. Mugny and Doise (1978) introduced the concept of socio-cognitive conflict theory to take account of the finding that children who worked with others were more likely to progress with the given tasks. Socio-cognitive conflict emerges when individuals have different perspectives, ideas, or views regarding one particular object (Butera et al., 2019). Hernandez (2012) explored the students' views on collaborative learning. The research focused on the extent to which collaborative learning outside the classroom contributed the improvement of the student performance. The results showed that there was a strong correlation between higher number of respondents who reported positive responses toward collaborative learning. Ibrahim et al. (2015) stated that collaborative learning provided Malaysian learners with academic and social support. Through collaborative learning, the learners were developing not only their own learning processes but also their peers, which led to the

achievement of their common desired goal. Collaborative learning was also found to heighten student motivation (Yunus et al., 2021). Interaction was considered as a fundamental component of the collaborative learning experiences among online learners (Faja, 2013).

The concept of satisfaction had been recently integrated to the context of education (Johnston et al., 2005; Styron, 2010; Asaduzzaman et al., 2013). Student satisfaction was viewed as the students' subjective evaluation of the different experiences and outputs in the onset of the learning process (Gray & DiLoreto, 2015). The learning satisfaction theory is rooted in the customer satisfaction theory that was promoted by Cardozo (1965). This theory focused on the impact of the practices that were evident during the teaching and learning processes participated by the students. The self-efficacy of instructors regarding technological use, content knowledge, and course development reflects on the students' perceptions toward the teachers (Boca, 2021). The emergence of new technologies had evolved the face of online education (Elumalai, 2020). Butt and Rehman (2010)

examined the level of satisfaction in higher education of 350 Pakistan students. The study investigated the teacher expertise, offered courses, classroom environment, and learning facilities as the factors affecting student satisfaction. Through a regression analysis, the aforementioned factors had a significant impact on the student satisfaction, citing teacher expertise as the most influential factor leading to a higher student satisfaction. Learning outcomes in online instruction helped enhance student satisfaction in the course. Instructors were required to develop logical and understandable instruction that underlined the expected learning outcomes (Gray & DiLoreto, 2015).

In this era of technological innovations, educational institutions had now reached the online platform as a viable mode of learning delivery. With this development, academic institutions were rethinking on how instruction was being delivered brought by this shift in pedagogical medium. The self-determination theory of human motivation proposes the pro-active quality of individuals (Ryan & Deci, 2000). The self-determination theory emphasizes the tendencies of human beings to seek growth, overcome challenges,

and acquire new experiences. Stansfield et al. (2004) identified a number of factors that affected students' academic performance in online learning programs. The affective learning outcomes of students in online instruction can be deepened through technological transformations that facilitated enriched and adaptively guided learning and interaction (Näykki et al., 2019). These affective factors were both educational and social in nature, including self-efficacy, flexibility of access to online learning materials, student-centered pacing of instruction, and assessments used. Nonetheless, they recommended that while online learning materials facilitated group works and collaborative activities, students were encouraged to create a "community of learners" within the online platform (Viet Anh, 2017).

As more academic programs across various disciplines were delivered via technology-based communications, program assessments were required in order to facilitate, enhance, and confirm the efficacy of instructional methods used in online learning. An online program can be assessed through different perspectives, and faculty satisfaction

was seen as an important contributor to the quality of the students' learning experiences (Bolliger et al., 2014). The equity theory emphasizes the importance of situations of balance, also as equity, observed when the ratio of outcomes/inputs of one equals the ratio of outcomes/inputs of others for the aim of comparison within organizations (Ogunbameru, 2004). Briegas et al. (2021) studied that relationship of faculty satisfaction and the students' positive achievement. They administered a questionnaire to 154 faculty members from the Extremadura region in Spain, and the results suggested that the degree of teacher satisfaction was relative to their perception of how their instruction was facilitative of their students' achievement. This would imply that the students' acquired competencies indicated a high degree of satisfaction among the faculty (Sims & Baker, 2021; Naseer & Rafique, 2021).

METHODS

A descriptive-correlational research design was employed. Through a stratified random sampling, the participants of the study were 297 undergraduate students

(male, $n = 134$; female, $n = 263$) and 253 faculty (male, $n = 112$; female, $n = 141$) of the eight HEIs in Dumaguete City who had undertaken online courses in the school year 2021–2022. The HEIs included in the study were the following: Silliman University, St. Paul University-Dumaguete, Negros Oriental State University, Foundation University, Asian College, STI College, Colegio de Santa Catalina de Alejandria, and Metro Dumaguete College.

Table 1. Profiles of Student and Faculty Respondents

Respondents	Frequency	Percentage
Students		
Gender		
Female	263	66.25
Male	134	33.75
Number of online subjects taken		
1 to 8	92	23.17
9 to 16	120	30.23
17 to 24	79	19.90
25 to 32	45	11.34
≥ 33	61	15.37
Year level		
First year	139	35.01
Second year	95	23.93
Third year	89	22.42
Fourth year	72	18.14
Fifth year	2	0.50

Total	397	100
Faculty		
Gender		
Female	141	55.73
Male	112	44.27
Duration in teaching online courses		
<1 year	25	9.88
1 year	26	10.28
2 years	142	56.13
3 years	29	11.46
4 years	7	2.77
5 years	4	1.58
≥ 6 years	20	7.91
Number of online courses taught		
1 to 3	80	31.62
4 to 6	84	33.20
7 to 9	37	14.62
≥10	52	20.55
Total	253	100

The results of the pilot phase of the five online questionnaires generated the following Cronbach alpha values: social presence (0.88; So & Brush, 2008), collaboration (0.96; Faja, 2013), student satisfaction (0.98; Elshami et al., 2021), academic performance (0.85; Hashemi, 2021), and faculty satisfaction (0.65; Bolliger & Wasilik, 2009). All coefficient

values were within acceptable range of reliability. Letter of request for permission to conduct the study was sent to essential offices and persons of the respective eight HEIs. For one HEI with organizational email, student and faculty names and emails were gathered from the concerned colleges and offices. Thus, the researcher was able to directly send the Google Form links to the respondents. For the seven HEIs without organization-wide emails, human resource and college personnel were requested to assist in the dissemination of the online survey through online communication applications, such Gmail and Messenger. The responses of the participants were automatically recorded in the researcher's Google Drive account. Due to health protocols during a pandemic, electronic communications were set up to answer possible queries and make follow-ups. The online surveys were monitored daily to determine the frequency and progress of number of received responses. The online questionnaires were opened and closed within a four-week timeframe. The data collected from the respondents used in the analysis and interpretation did not contain

any significant information that may identify the participants.

RESULTS AND DISCUSSION

The purpose of this study was to present a current view of the existing online distance learning environment and determine the relationships of online learning factors—social presence, collaboration, student satisfaction, academic performance, and faculty satisfaction—among higher education institutions in Dumaguete City during the COVID-19 pandemic. The student learning and faculty teaching experiences in online distance education were measured through the (1) social presence, collaboration, academic performance, and student satisfaction questionnaires and the (2) faculty satisfaction questionnaire, respectively.

Perceived Levels of Social Presence, Collaboration, Student Satisfaction, Academic Performance, and Faculty Satisfaction

The students exhibited a high level of perceived social presence through computer-mediated communications (CMC) in the online learning platform ($wx = 3.57$, $SD = 0.61$; Table 2). Computer-mediated communication was seen as a viable way of educational communication. Interactive online learning provided students with the opportunity to discover and uncover new information by exploring digital input. The results of the study support the concepts stated in social presence theory where interpersonal relationships through CMCs play a critical role in student perception of online learning experiences. The students had a positive response to online learning when they were able to build trusting relationships with other learning participants. Conversely, the students showed moderate agreeable notion with regard to the use of CMC in sending messages in which only the intended receiver can access. This presented concern on third-party access to personal information through messages sent using CMC. Online privacy among students were commonly centered on activities such as peer reviewing and assessment, project-

related assignments, and peer access to online portfolios (Wilson et al., 2018). Effective language use was vital in technology-based interpersonal communication to create a conducive online learning environment (Aytekin, 2003).

Table 2. Perceived Levels of Social Presence, Collaboration, Student Satisfaction, Academic Performance, and Faculty Satisfaction

Variables	Mean	SD	Description
Students			
Social Presence	3.57	0.61	High
Collaboration	3.97	0.55	High
Satisfaction	3.56	0.67	High
Academic Performance	3.26	0.53	Moderate
Faculty			
Satisfaction	3.10	0.39	Moderate

Collaborative learning in the context of ODL involved the collective effort and constant communication of online learners in accomplishing assigned group works (Stoytcheva, 2017). The results indicated that the students had a high level of positive collaborative experiences in the online learning courses ($wx = 3.97$, $SD = 0.55$).

The students expressed a high level of acquired learning through collaborative activities present in the online courses. Collaborative learning through peer feedbacking was considered to be a contributing factor to positive online learning involvement. The data showed that students enrolled in online courses were more engaged in online discussion when collaborative assignments were part of their learning experiences. Regarding the theoretical aspect, the socio-cognitive conflict theory was highly noted in the results of the study. The student responses demonstrated that the collaborative learning activities enabled them to consider varied perspectives and views regarding a common topic. Peer communication and interaction also aided the students to understand the activities included in the online lessons. Internal motivation was increased when students received diverse insights into their outputs and openly communicate with peers, providing a positive impact to their learning experiences (Yang et al., 2020).

The students perceived a high level of satisfaction to their online learning experiences ($wx = 3.56$, $SD = 0.67$). The

students felt a sense of belonging in the online learning community. Instructor accessibility and availability were also highly present in the online courses. In the online educational setting, peer and instructor presence was vital for students to feel a sense of belonging, importance, and responsibility (Moore, 2014; Alawamleh et al., 2020). Building a sense of community in the online platform had added more meaning to the students' learning experiences. Moreover, the learning management systems (LMSs) employed in the online courses were found to be user-friendly. HEIs in Dumaguete City used institution LMSs and open online LMSs (e.g., Google Classroom, Microsoft Teams, Zoom, etc.), wherein learning processes in the online classroom were reinforced. Students had been considered as the most vital stakeholder in the education sector (Hettiarachchi et al., 2021). Additionally, the results of the study strengthen the propositions of the learning satisfaction theory, focusing on the impact of educational practices that meet the learning needs of the students. The student responses to the satisfaction questionnaire implied that

the actual perceived service was able to meet their expectations. Thus, the students' progression and development in their academic pursuits were viewed as indicators of students' level of satisfaction to the perceived service. The online courses' level of interpersonal interaction within the online community was viewed as the most vital component in predicting student grades (Jaggars et al., 2013).

The impact of the new learning modality on students' academic performance had received notable consideration. As such, academic performance was viewed as a critical parameter of institutional performance in the online platform (Elhadary et al., 2020). The student responses generated a moderate level of perceived academic performance in the online learning platform ($wx = 3.26$, $SD = 0.53$). The student responses denoted a moderate level of positive affective response to online learning and instruction. Time allocation was also found to be highly adequate for accomplishing the online tasks. The present data showed that time management and administration played a crucial role in the students' performance

and accomplishment in the online platform. In addition, relevant aspects of the self-determination theory were also echoed in the learning outcomes exhibited by the students. The present data showed that the students displayed proper time management and application of acquired learning in completing their online requirements. With the abrupt switch to online methods, a new culture of virtual communication had emerged, where limited verbal and nonverbal communications were exchanged among online participants. Factors such as time allotment, technology used, and technical disruptions impacted the quality, duration, and length of communication present in the online classroom (Yunus & Rezki, 2020; Alawamleh et al., 2020).

Faculty satisfaction was seen to be a vital component to determine the quality of delivered online education (Sahito & Vaisanen, 2017). In the current study, the faculty perceived a moderate level of satisfaction to online teaching ($\bar{x} = 3.25$, $SD = 0.04$). Online teaching as an opportunity to continue learning amid the COVID-19 pandemic received a very high favorable response from faculty. However,

student motivation and participation remarkably dropped in the online platform. This would be cited as an avenue of consideration for improved faculty experience in the online setup. Consequently, the faculty expressed underwhelming satisfaction with regard to the reward received in online teaching. Online teaching had been viewed to lack faculty flavor and to be qualitatively inferior compared to conventional teaching (Simon, 2012). This factor may have lessened the sense of reward educators feel when using the online platform. Moreover, increased pay and professional development opportunities were considered as top incentives that may motivate educators to continue teaching online (Tenzer, 2012). Regarding existing theories on faculty satisfaction, the equity theory presented remarkable proposition, focusing on the balance of inputs and outputs. The faculty responses denoted that reward and feedback for online teaching are prominent features toward achieving high satisfaction to online teaching. Hence, the inputs of the faculty such as skill sets, pedagogical knowledge, and educational experience should be able

to generate ideal outputs such as praise and recognition, incentives, and positive evaluations.

Relationships of Social Presence, Collaboration, Student Satisfaction, and Academic Performance

One of the aims of the current study was to examine the learning experiences and perceptions of students in online distance learning among higher education institutions in Dumaguete City during the COVID-19 pandemic. This section highlighted the relationship of the four student-centered interacting components in ODL: social presence, collaboration, student satisfaction, and academic performance. Spearman's rho correlational analysis was employed to measure the strength of the overall relationship between the variables (Table 3).

Table 3. Relationships of Social Presence, Collaboration, Student Satisfaction, and Academic Performance

Variables	Spearman's rho	P value
Social presence and collaboration	0.56	<0.000001*

Collaboration and student satisfaction	0.57	<0.000001*
Social presence and student satisfaction	0.70	0.0000005*
Student satisfaction and academic performance	0.80	<0.000001*

*Statistically significant relationship

Social Presence and Collaboration

Statistical analysis showed a significant statistical relationship between perceived levels of social presence and collaboration in the student experiences in online distance learning ($r = 0.56$, $p = <0.000001$). This indicated that students who displayed high levels of social presence tend to have positive collaborative learning experiences. Based on the student responses, this would suggest that collaborative task performance in the online distance learning environment can be improved when a strong sense of social presence was present. This interrelation promoted a feeling of teamwork and effective online collaboration (Jelfs & Whitelock, 2000; Fan & Konold, 2010).

Conversely, interactivity among online participants served as an indicator of social presence, which was considered as a requirement for collaboration because it promoted expressing one's thoughts and acknowledging others' perspective. Thus, it was apparent that the interwoven relationship of social presence and collaborative learning was a necessary key for achieving positive academic experiences in online distance learning (Zimmer, 2008; Zhao et al., 2013). This result would propose that social presence factors such as observable social cues, peer interaction, sense of privacy, and quality of online communication should be taken into consideration when conducting meetings and delegating online tasks. Online collaborative tasks were viewed as avenues in enriching social presence factors. When these social presence factors were effectively enabled, a stronger collaboration resulting to increased understanding of tasks, higher comfort in interaction, and improvement of self-efficacy were observed among online learning students. Thus, data signified that social presence indicators and collaborative learning shared a mutual and

positive relationship in the online learning format. Akcaoglu and Lee (2016) investigated the effect of group size on the social presence perception on students enrolled in two graduate-level online course. Their results showed that the students perceived higher levels of social interaction, social space, and group cohesion when involve in small-group discussions. They suggested that instructors can modify the group size in collaborative work to promote social presence in online discussions and interactions. Previous studies (Wald et al., 2016; Little et al., 2017; Kalamat et al., 2022) also noted significant role of group activity dynamics in promoting a sense of community in the online setting.

Collaboration and Student Satisfaction

A statistically significant relationship was found between the perceived levels of collaboration and student satisfaction ($r = 0.57$, $p = <0.000001$). This signified that students who reported a high level of collaborative were likely to experience higher satisfaction levels in the online learning platform. The

data showed that the students enrolled in online learning courses reported elevated satisfaction with their online learning experiences when they were involved in varied collaborative activities. This could imply that online instruction that centered on social development through collaborative tasks increased the likelihood of student satisfaction in online courses. Simply put, when students believed that the collaborative tasks led to relevant and applicable learning, increased peer interaction, and fair assessments, positive learning experiences were formed, leading to more desirable attitude toward online learning. Thus, it can be noted that collaborative learning and student satisfaction projected a positive partnership in online settings even during the COVID-19 pandemic. Moreover, these engagements also generated exposure to and understanding of diverse ideas and perspective that could enrich the knowledge construction and self-awareness (Smith et al., 2005). The effective use of online teaching strategy with the utilization of computer-mediated communications can be employed to engage students in online

collaborative learning (Shea et al., 2001; Watson & Gemin, 2008). The present study reflected the findings of Ali et al. (2011), stating that the level of satisfaction with online learning experiences was impacted by the quality of interaction among online participants. The same notion was found in the study by Humes (2015), noting that peer group feedbacking created opportunities to build communication lines that contribute to higher levels of satisfaction with the online platform.

Social Presence and Student Satisfaction

Statistical analysis denoted a statistically significant relationship between the perceived levels of social presence and student satisfaction in online distance learning ($r = 0.70$, $p = 0.0000005$). This suggested that students who gathered high levels of social presence were likely to have high levels of student satisfaction toward the online learning platform. Social presence had a significant impact on student satisfaction as it was viewed as a vital component in sustaining the delivery of quality online education (Howell & Buck, 2012; Richardson, 2012; Van Wart et al.,

2020). The data reflected that highly present interaction and feedbacking from peers and instructors increased the level of comfort of the students in communicating in the online platform, leading to a higher satisfaction to the online course. It can be suggested that student satisfaction in online learning was shaped by the sense of learning community forged through computer-mediated communications. Online interaction and engagement of students to peers and instructors through computer-mediated communications were seen to have positive impact to online learning experiences during the COVID-19 pandemic. This highlighted the close interconnection of technology, interaction, and communication which were common constructs between social presence and student satisfaction. Richardson et al. (2012) also reported congruent results, noting that instructor feedback and communication breakdown had a detrimental impact on student satisfaction. Likewise, Alsadoon (2018) explored the impact of social presence on student satisfaction with online distance learning among 600 university students. The results revealed that social presence is

a significant predictor of student satisfaction with mobile learning (Alenezi, 2022).

Student Satisfaction and Academic Performance

The results of the statistical analysis showed a statistically significant relationship between the perceived levels of student satisfaction and academic performance ($r = 0.80, p = <0.000001$). This denoted that students who expressed higher levels of student satisfaction were more likely to achieve higher levels of academic performance in the online learning setting. The results would indicate that student satisfaction can be a reliable factor in measuring the academic success of students in online learning environments. This development conveyed a strong connection between how students perceive their academic performance and how satisfied the students were with the existing online learning instructions and processes. The student responses on instructor quality, technology, course structure, and learning outcomes relative to online distance learning generated significant positive

effects on student satisfaction, thereby predicting a positive impact of their performance. Perceived satisfaction regarding the adoption of online systems, student and teacher communication, service quality and accessibility, and technological availability was found to benefit student performance and efficacy in the online learning platform (Gray & DiLoreto, 2016; Hussein, 2017; Almaiah et al., 2020). A previous study by Hasani and Aghdasi (2014) found complementing results with the present study, noting that attaining academic satisfaction would signify higher levels of academic performance. Reflecting the results of the current study, Ridzuan and others (2018) had also proposed that satisfaction with instructor-related processes leads to better performance in academic course work. Additionally, Rajadurai et al. (2018) examined the level of satisfaction and academic performance of 2,283 Malaysian undergraduate students in the online learning environment. The results indicated a positive relationship between satisfaction and academic performance, encompassing usage of learning materials, facilitation of online discussions,

assessments, and university services (Setyohadi et al., 2017; Chopra et al., 2019; Al-Fraihat et al., 2020).

Relationships of Faculty Satisfaction toward Student Satisfaction and Academic Performance

The current study examined the learning experiences and perceptions of students and faculty in online distance learning among higher education institutions in Dumaguete City during the COVID-19 pandemic. Through Mann–Whitney *U* test, the perceived levels of student satisfaction and faculty satisfaction significantly differed (Table 4). The same was true for the students' academic performance and faculty satisfaction as exemplified in their respective *p* values, which were less than the alpha or the margin of error at 0.05. This showed that the two variables did not go hand in hand. Specifically, The faculty's level of satisfaction did not necessarily result in student satisfaction. The same was observed between faculty's level of satisfaction and students' academic performance. In a nutshell, the students' satisfaction and

academic performance can either be high or low regardless of the teachers' level of satisfaction.

Table 4. Relationships of Student Satisfaction and Academic Performance toward Faculty Satisfaction

Variable	Groups	Mean	<i>U</i>	<i>Z</i>	<i>P</i>
Student satisfaction and faculty satisfaction	Student Faculty	379 .8 240 .3	28,67 1.5	9.2 3	<0.000 1*
Academic performance and faculty satisfaction	Student Faculty	353 .8 281 .2	39,00 2.5	4.8 1	<0.000 1*

*Statistically significant difference

Student Satisfaction and Faculty Satisfaction

The results showed a statistically significant difference between the student satisfaction scores ($wx = 3.56$, $SD = 0.67$)

and faculty satisfaction scores ($wx = 3.10$, $SD = 0.39$), which denoted no significant relationship between the two components ($z = 9.23$, $p = <0.0001$). The present data illustrated that students and faculty had different levels of satisfaction to the online learning platform, noting a significantly higher satisfaction among the students regarding their online learning experiences. The faculty expressed moderate level of satisfaction to student-related factors, with focused on the perceived limited student participation to online discussion and affective factors related to student engagement. On the other hand, the students expressed a high level of satisfaction to instructor-related constructs, noting high instructor presence, clear task delegation, and sense of belonging. This difference in perception toward each other would signify that despite certain discontent with lowered student participation, the faculty were still able to fulfill their roles and responsibilities in the online classroom, which were positively perceived by the students. This could denote that student-centered teaching concerns experienced by the faculty had no direct impact to their delegated instruction

and motivation for teaching. Furthermore, this could also imply that the strategies and methods employed by the faculty were effective in strengthening the interaction of students to content and other online participants despite the limitations imposed by technology-based communications. The roles and responsibilities of instructors were shaped by the apparent needs of the students, encompassing the interaction among the students, delegation of course content, and provision of online learning activities that promote high interactivity (Gibbons & Wentworth, 2001). In the delivery of course content through technology-mediated communications, instructors put considerations on the organization of course content, strategies for interaction and communication, engagement of students to other online participants, and methods for assessment (Hardy & Bower, 2004). The results of the current study showed a different projection from the study conducted by Blundell et al. (2020), wherein faculty satisfaction was strongly correlated with the students' level of satisfaction with the online course. Consequently, Kinney et al. (2012)

investigated the faculty ($n = 18$) and student ($n = 28$) perceptions of the effectiveness of engineering courses delivered through online learning. Results of the study noted that faculty and students concurred that effective online communication is a primary concern in online learning, putting emphasis on the quality of interpersonal communication among online participants and improving communication technologies used in the platform (Mu & Wang, 2019; Yuan & Qi, 2020; Sun et al., 2022).

Academic Performance and Faculty Satisfaction

Although both faculty satisfaction ($w_x = 3.10$, $SD = 0.39$) and student academic performance ($w_x = 3.26$, $SD = 0.53$) were both in moderate levels, the statistical analysis generated a significant difference ($z = 4.81$, $p = <0.0001$) between the two sets of scores, suggesting no significant relationship between the two factors. On one side, student responses showed high levels of academic performance with regard to the learning outcomes ($w_x = 3.57$, $SD = 0.07$), highlighting their successful

accomplishment of online tasks on time, improved grades, and perceived high participation in online discussions. This scenario reflected the situation in the previous section that despite the challenges of the faculty to motivate students to participate in the online discussions, the students still felt that they were able to adequately interact with the course content and other online learning participants. This again emphasized that strategies in online communication employed by the faculty were effective in promoting online learning participation among the students despite the perceived difficulty among the faculty to engage the students during online discussions. While institution-based factors such as workload and preparation time had negatively impacted faculty experiences in the online learning platform, the student responses showed that affective factors such as fear and anxiety brought by the coronavirus lockdowns had adversely affected their academic performance. This would denote that environmental factors related to the COVID-19 pandemic had affected student academic performance, which were not directly connected to online

instruction delegated by the faculty. The data from a previous study reported by Asif et al. (2016) showed similar output with the present research, wherein there was no direct correlation between faculty and student satisfaction. Parallel to the results of the current study, the faculty displayed strong determination in fulfilling their responsibilities despite the challenges in the online environment. Likewise, Gray and DiLoreto (2016) investigated the relationships of learner interaction, student engagement, and instructor presence with student perceived learning among 216 American university students in online learning environments. The results showed that instructor presence generated a statistically significant effect on students' perceived learning in the online classroom (Richardson et al., 2016; Barnette, 2018; Park & Kim, 2020).

CONCLUSIONS

This study examined the constructs enveloped in ODL concepts of social presence, collaboration, student and faculty satisfaction, and academic performance. Taking a closer look into these concepts led

to a better understanding of the existing features and processes in the delegated online distance education in higher education institutions during the COVID-19 pandemic. With the high levels of perceived social presence leading to positive learning experiences, this placed importance in building social relationships through CMCs to increase peer interaction. The results showed that feedbacking through collaborative tasks had increased student motivations for learning. Since the students expressed high levels of satisfaction to their online learning experiences, this could signify the continued application of online learning tools in future academic undertakings. Nevertheless, with the moderate level of perceived academic performance among the students, this presented a challenge to improve the socioemotional support for students, especially during unideal conditions affected the learning environment. In addition, the moderate level of faculty satisfaction to online teaching highlighted the need to provide faculty with developmental support in online classroom management to increase student

engagement and regulate negative reactions toward technical difficulties and additional workload. Furthermore, with the established relationship of student-related concepts, this would call for the continued development of their interrelated constructs in order to promote a more student-centered online learning environment. Finally, with the apparent independence of faculty satisfaction toward student satisfaction and academic performance, this could lead to exploring other teaching constructs that may lead to a better understanding of the plight of teachers when new learning modalities were required to deliver instructions. All these aforementioned results were illustrated to aid the educational sphere in creating meaning and building understanding to the ongoing educational processes during this time of COVID-19.

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