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Exploring The Influence of The Pandemic Online Learning Setup on The Quality of Social Interactions Among College Students

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Abstract: This quantitative study aimed to know the effects of the pandemic online setup to the quality of social interactions among selected sophomore and junior students of a college at the national university. The study used stratified random sampling equal allocation. A total of 95 participants accomplished the survey questionnaire through Google form. Mode and Partial Least Squares Structural Equation Modeling (PLS-SEM) were used to analyze the data. Results show that most students expressed a negative perception of online learning compared to traditional classroom settings, citing difficulties in effective learning, lack of confidence, and a preference for face-to-face instruction. They also reported challenges in connecting with peers, experiencing less authentic conversations, and feeling isolated due to the limitations of online communication. The study assessed the quality of social interaction among students, focusing on interpersonal sensitivity and socio-emotional dominance. The findings revealed a low level of interpersonal sensitivity, indicating limited awareness of others' perspectives and a lack of willingness to assist. Respondents had average ratings in terms of socio-emotional dominance, indicating struggles in understanding and regulating emotions and navigating social interactions. The relationship of the online learning setup and the quality of social interactions reveal a weak significant relationship. It is necessary for education institutions to enhance opportunities for more direct social interactions and to provide support for students to communicate effectively.

Keywords: college students**,** online setup, pandemic, quality of social interaction

I. INTRODUCTION

Education is just one of the aspects of social, cultural, and economic life that the COVID-19 pandemic affected. Academic institutions were temporarily closed due to the pandemic and face-to-face classes were prohibited for the meantime. As COVID-19 cases continuously rose, the government implemented restrictions such as social distancing, allowing only certain age groups to go outside, and stricter health protocols. The Department of Education (DepEd) decided to continue courses via blended learning which allowed students to participate in classes without having to physically go to school to avoid any virus transmission (Rita, 2020). The new normal for schools was the use of online platforms such as Google Meet, Zoom, Google Classroom, and the like. Blended learning, online learning and modular learning were done for almost two academic years in the Philippines.

The learning environment significantly influences the educational journey of students (Barrot, 2018). Students and teachers experienced struggles due to the transition from traditional learning to online learning in 2020. Students encountered difficulties due to limited access to gadgets and financial constraints while teachers experienced exhaustion from the increased workload (Barrot et al., 2021; Buenaluz, 2021). Students had varying preferences and experiences with the online learning environment. Learners were more inclined to be in the classroom with professors while the online setup was continuously being implemented; students were having struggles, frustrations, and discomforts in the virtual environment (Pitt, 2020; Reyes et al., 2021).

In comparison to the virtual alternative, an in-person or traditional education is incredibly helpful to students of all ages (Singh et al., 2020). Students are used to interacting with classmates inside and outside the school. Most of the requirements in schools are individual activities, group activities or done in pairs. However, there is less physical interaction between students and their teacher in the online setup since they are communicating using gadgets and different platforms.

Social interaction is the process of mutual and flexible responses between two persons, providing opportunities for people to connect in conversations (Mehall, 2020). Interaction with other people, no matter how minor or short, improves emotional bonds and decreases the feeling of isolation. The quarantine regulations, though, led to negative impacts on direct social interactions. Building social relationships in times of the pandemic when restrictions were being implemented was difficult. Due to social distancing, the way we interacted with people changed. According to Long (2021), traditional social interaction norms such as greetings, handshakes, and

observing facial expressions were disrupted due to the pandemic. It changed the way people greeted and interacted with each other.

One of the most difficult aspects of studying online and passing the courses is not having enough communication with educators and friends (Robinson, 2020). The online setup leads to a barrier when communicating in an online learning environment. Wright (2021) found that online classes often result in superficial and task-driven group interactions among students. The focus seemed to be on completing tasks rather than engaging in meaningful interaction. This highlights the limitation of online learning in replicating the synchronous and richer social interactions that occur in face-to-face settings. Further, the lack of social interaction in an online setup affects the happiness of students and increases their sense of isolation (Azmat & Ahmad, 2022; Robinson, 2020). Studies also showed that the lack of interaction can heighten the stress level of students (Dhawan, 2020; Artino, 2009). Thus, the concept of social presence in online courses is crucial because it affects student interaction, connectivity, and a sense of belongingness which have a bearing on their academic performance and directly affects mental health (Barrot et al., 2021; Kakuchi, 2021).

The transition to online learning during the pandemic presented numerous challenges for students, including limited resources for online teaching, reduced social interactions, increased anxiety, and other academic and social issues (Baber, 2020; Elmer et al., 2020; Maskari et al., 2021). Social interactions play a crucial role in students' lives as they contribute to the development of relationships and interpersonal skills and in creating a conducive learning environment (Mehall, 2020). However, in an online setup, students may experience a decline in social interactions, potentially affecting their ability to interact with others (Maskari et al., 2021). While several studies have examined the effectiveness and challenges of online learning, limited research has focused on the impact of the online setup on the quality of students' social interaction in the Philippine context. Therefore, this study aims to address the following questions:

1. What is the online learning experience of the respondents during the pandemic?
2. What is the perceived quality of social interactions among respondents in the online setup during the pandemic?
3. What are the effects of the online setup on the quality of social interactions?

II. METHODOLOGY

Research Design

This study employed a quantitative research design to investigate the effects of the online setup during the pandemic on the quality of social interaction among college students. Specifically, this research utilized a cross-sectional design, which involves collecting data from multiple subjects at a single point in time. The choice of a cross-sectional design was appropriate for this study as it allowed for the collection of data pertaining to the effects of the online setup on social interaction within a specific timeframe and with a specific cohort.

Respondents and Sampling Method

The target respondents for this study consists of sophomore and junior students enrolled in the BS Human Ecology program of the national university. These students were chosen because they experienced two academic years of online learning before transitioning to face-to-face classes. The total population of interest includes 225 students, with 114 sophomores and 111 junior students. To ensure a representative sample, stratified random sampling with equal allocation was employed. To determine the appropriate sample size, a margin of error of 5%, a confidence level of 95%, and a response distribution of 50% were considered. With these, a target sample size of 144 respondents was determined with 72 participants from the sophomore level and 72 from the junior level. However, only 95 students responded (66% response rate). Of the 95 respondents, 56.8% have a sophomore standing while the remaining are of junior standing. Majority of the respondents are 21 years old and are from the province of Laguna.

Research Instrument

In this study, a questionnaire was utilized to collect data on the effects of the online setup on the quality of social interaction among the sophomore and junior. To ensure the reliability of the questionnaire, a pretest was conducted with 32 respondents from various college programs within the university, excluding the BS Human Ecology program. The first Likert scale used in the questionnaire consists of 12 statements related to students' experiences with online learning. This scale employed a 5-point agreement Likert scale ranging from "strongly agree" to "strongly disagree." The reliability of this Likert scale was assessed using the Cronbach alpha coefficient, which yielded a value of 0.80. The second Likert scale in the questionnaire consisted of seven statements describing the quality of social interaction. This scale was adapted from the study by Lopes et al. (2005). The scale employed a 9-point rating ranging from "not at all" to "extremely." The reliability of this Likert scale was assessed using the Cronbach alpha coefficient, yielding a value of 0.81.

Data Collection Method

The data collection procedure for this study involved the use of an online survey through a Google form as the primary method, with the option for respondents to request a hard copy of the questionnaire if preferred. In cases where respondents chose the hard copy option, the questionnaire was personally delivered and collected.

Data Analysis Methods

The socio-demographic profile of the respondents was examined using frequency counts to ensure that the targeted sample size of the study was achieved. The quantitative data obtained from the two Likert scales were subjected to statistical treatment, specifically, the mode as this can clarify central tendencies and patterns within a dataset which can be valuable for making comparisons, identifying trends, or analyzing patterns. In addition, the Partial Least Squares Structural Equation Modeling (PLS-SEM), a statistical technique utilized for analyzing complex relationships between latent variables in a structural equation model was used. Before proceeding with PLS-SEM, certain computations were conducted to ensure the reliability and validity of the data such as assessing indicator reliability, bootstrapped loadings for indicator reliability, internal consistency reliability, heterotrait–monotrait ratio (HTMT) criterion for discriminant validity, bootstrapped HTMT criterion for discriminant validity, and variance inflation factor.

Ethical Considerations

The informed consent form and permission of the respondents to use their data for research purposes were obtained before they accomplished the survey. It was made clear to the respondents that they had a choice to withdraw their participation or to leave a blank if there are questions that are uncomfortable for them to answer. They were also assured about the confidentiality and privacy of their data only for research purposes.

Limitations of the study

The study's sample size was limited to 95 respondents out of the initial 144 students (66% response rate). The reasons for incomplete responses were attributed to time constraints and emails being overlooked. This limitation may impact the generalizability of the findings to the larger population. Data collection for the study was conducted through Google Forms, an online platform. This method facilitated data collection and allowed for the convenience of the respondents. However, the reliance on an online platform may have introduced potential biases, such as technological barriers or limitations in internet connectivity, which could affect the representation of the sample, and the quality of the data collected. Furthermore, it is important to note that the study was conducted as the students were transitioning to face-to-face learning. The findings may be influenced by the specific circumstances and context of that time, including the ongoing effects of the pandemic and any changes in the online learning environment. Therefore, the results should be interpreted within the context in which the study was conducted.

III. RESULTS AND DISCUSSION

Online Learning Experience of the Respondents

The online learning experiences of students are discussed through two categories: the barriers to the effectiveness of online learning and the lack of social interaction. Based on majority of students' responses, their online learning experience is generally negative. Majority of the respondents concur that traditional classroom instruction is more successful than online instruction. The participants faced various challenges and expressed concerns about the limited opportunities for social interaction in the online classroom. Students' preferences for their learning environment and the learning process vary. While some students may find the online setup to be positive and beneficial, others may have a negative experience. Different individuals have varying perspectives and experiences when it comes to online learning.

Barriers to the Effectiveness of Online Learning

The obstacles to online learning's efficiency are displayed in Table 1. Results show that Statement 5 garnered the highest frequency of 44. About 46.42% strongly agreed that they learned well in a regular classroom than they did online. This is supported by the claim of Mehal (2020) that interaction is essential for learners' growth and development as well as how well they learn. When students can interact with their professors, they can raise questions. Asking questions allows students to seek clarification and gain a deeper understanding of the subject matter. By seeking additional information or explanations, students can address any confusion or gaps in their knowledge. The lack of interaction with students and teachers is one of the limitations present in an online class.

Statement 2 also garnered a high frequency with 41 respondents (43.16%) who agreed that learning in an online classroom is less effective than studying in a regular classroom. This is consistent with the study of Singh et al. (2020) wherein students find traditional classrooms more effective than online classrooms. Reasons

presented by Ozkul and Kilinc 2018) and Li and Lalani (2020) were the lack of feedback, limited opportunities for collaboration, and reduced social connections. Reduced motivation and engagement are visible wherein students encounter struggles in self-discipline and sustaining motivation. Online classrooms lack direct interaction between students and teachers, and this can result in a more challenging situation for students to engage in real-time discussion and ask questions. Spears (2012) stated that interaction is an important component of learning as it helps in organizing and reflecting on one's thoughts and reasoning processes. Effective communication between students and teachers is essential for optimal learning outcomes.

Table 1. Barriers to the effectiveness of online learning

Statements	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	f	*%*		*%*	*f*	*%*	*f*	*%*	*f*	*%*
1. I cannot learn in the online classroom as compared to the traditional classroom.	3	3.16	19	20.00	27	28.42	35	36.84	11	11.58
2. Learning in an online classroom is not as effective as compared to the traditional classroom.	0	0.00	5	5.26	13	13.68	41	43.16	36	37.89
3. The online learning approach cannot substitute for the traditional classroom approach.	0	0.00	8	8.42	19	20.00	36	37.89	32	33.68
4. I do not feel comfortable and confident in online learning as compared to the traditional classroom.	4	4.21	25	26.32	23	24.21	26	27.37	17	17.89
5. I learn better through a traditional classroom compared to an online learning approach.	0	0.00	2	2.11	16	16.84	33	34.74	44	**46.32**

For Statement 3, roughly 37.89% agree that using an online learning strategy cannot replace using a traditional classroom strategy. Kumari et al. (2021) posit that online teaching approaches cannot replace the traditional approaches. The result indicates that students would rather learn inside a traditional classroom with a traditional approach than online learning. The traditional classroom primarily offers unique advantages and benefits that the online learning cannot replicate such as opportunities for immediate feedback, real-time discussion and interaction, and hands-on learning experience that benefit students to have a deeper understanding of the subject matter.

Then, 36.84% of the respondents agree with the statement, "I cannot learn in the online classroom as compared to the traditional classroom,". Looking at the agree and strongly agree responses indicate that majority of the respondents found it challenging to learn online because they are more used to traditional classroom settings. Based on the study by Barrot et al. (2021), the online learning environment of students, which is mostly at home, was presented as the biggest problem and had an impact on the students' learning experience. Students prefer to learn inside the classroom as they find their home environment less conducive due to distractions, thus, a great challenge to being focused on studying.

Lastly, with Statement 4, over 27.37% of respondents agreed that they do not feel confident and comfortable in an online learning setup. It was mentioned by Azmat and Ahmad (2022) that students felt lonely, isolated, and anxious in taking online classes which resulted in them being uncomfortable. The students may miss the in-person connections and immediate feedback that traditional classrooms provide, which can affect their comfort level in an online learning environment. Overall, the results indicate that students are more inclined to agree that traditional classroom instruction is more effective than online instruction.

Level of Social Interaction

The perceived level of interaction among respondents in an online learning environment is displayed in Table 2. Results show that 60% of the respondents strongly agreed with Statement 1 that students in online classes cannot connect or communicate with one another. This demonstrates a common notion that the online learning environment limits a student's ability to interact directly in person with peers. The claim of Elmer et al. (2020)

supports the result of the study in that the pandemic results in changes in social networks. As restrictions arose, people had a hard time to cope in maintaining friendships and having conversations with people seemed difficult. Secondly, Statement 2 followed with 54.74% of the respondents who strongly agreed that compared to traditional classroom instruction, online learning seems impersonal and isolated. Students feel there is very little communication among them as well as little personal connection, social involvement, and a sense of community. The respondents agreed that there were difficulties with engagement, communication, and the impression that online learning was impersonal when compared to face-to-face learning environments. This is supported by the study of Robinson (2020) where during the pandemic, the lack of social interaction led to feelings of isolation and the online setup brought barriers when it comes to communicating.

An additional issue in an online classroom is the absence of social context cues (Statement 4). According to the results, 49.47% of the students strongly agreed with the statement. Social context cues refer to the nonverbal and verbal behaviors used by people to communicate in social situations such as facial expressions, gestures, posture, and tone of voice. The pandemic broke down norms when interacting with people (Long et al., 2021). Greetings, such as handshakes and hugs, were replaced due to social distancing protocols. The use of face masks was a barrier when communicating since facial expressions are not visible which is crucial for conveying emotions and understanding others. These social context cues tend to be absent in an online setup which makes it difficult to adapt to communication and social situations.

Statement 7 shows that a total of 44.21% of students agreed that speaking with classmates who are physically close to them in an online classroom is impossible. Online classes tend to reduce the frequency of such casual interactions, but the pandemic and quarantine restrictions also played a role in why speaking with peers nearby was also quite impossible then.

Lastly, conversations in an online classroom may not feel authentic, according to 34.74% who agreed with this statement. Similarly, Cockerham et al. (2021) revealed that students found a lack of engagement with their teachers and peers. The inability to see clear facial expressions or the lack of opportunity to hold, pat, or high-five someone may give that sense of inauthenticity to the online interactions.

Table 2. Perceived levels of lack of social interaction

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
Statements	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
1. There is a lack of interaction/communication among students in the online classroom.	1	1.05	0	0.00	7	7.37	30	31.58	57	**60.00**
2. Online Learning seems impersonal and isolated as compared to traditional classroom.	0	0.00	1	1.05	7	7.37	35	36.84	52	54.74
3. I am afraid of being isolated in the online classroom.	5	5.26	20	21.05	27	28.42	25	26.32	18	18.95
4. There is a lack of social context cues in the online classroom.	0	0.00	3	3.16	14	14.74	31	32.63	47	49.47
5. There is a lack of student collaboration in the online classroom.	0	0.00	10	10.53	20	21.05	33	34.74	32	33.68
6. Communications without physical interaction may not feel authentic.	3	3.16	3	3.16	16	16.84	40	42.11	33	34.74
7. Students lose the ability to converse with students near them.	0	0.00	3	3.16	8	8.42	42	44.21	42	44.21

Overall, the result implies that the respondents experience multiple problems and concerns regarding the opportunity for social interaction in an online classroom. These findings show the varied challenges of the students in that setup. These highlight the students' worries about the potential for inauthenticity in interactions in online classes and the perceived loss of options for engagement with peers who are nearby. According to the Social Penetration Theory (Carpenter & Greene, 2016), social interaction is essential for the gradual and reciprocal process of self-disclosure, which leads to increased intimacy and deeper connections. However, when social

interaction is lacking, individuals may find it challenging to develop and maintain close relationships, as the opportunities for self-disclosure and the exploration of deeper levels of interaction are limited. This can result in a sense of isolation and a reduced sense of social connectedness. These results highlight how the online learning environment affects the dynamics of student communication and social interaction.

Quality of Social Interaction Perceived by the Respondents

The quality of social interaction of students are discussed through the two components which are interpersonal sensitivity and socio-emotional dominance. Interpersonal sensitivity refers to the ability to accurately evaluate another person's abilities, characteristics, and emotional state based on nonverbal cues (Das, 2021). According to Lopes et al. (2005), social-emotional dominance refers to an individual's level of control and proficiency in managing their social and emotional experiences, including regulating their emotions, expressing themselves effectively, and establishing and maintaining positive relationships. The participants' levels of interpersonal sensitivity are at a low level while their socio-emotional dominance is within the average range.

Interpersonal Sensitivity

The perceived degree of interpersonal sensitivity is displayed in Table 3. According to the results, the respondents have a very low level of interpersonal sensitivity. Particularly, 35.79% of respondents rated themselves with a 3 which is below average in having awareness of other people's perspectives. Looking at the students' ratings from 1-3, in fact, around 68% feel they are not good at understanding other people's perspectives. For Statement 2, 35.79% rated themselves with a 2 in their readiness to assist others. If this is combined with those who rated themselves with a 1, around 64% of the respondents are not willing to help others. The findings of Elmer et al. (2020) pointed out that some students have a phase where they avoid communicating with their friends as they are too occupied in doing their requirements. This implies that it may be hard for students to extend help as they are also struggling doing their own tasks. Barrot et al. (2021) emphasized that students' learning challenges were due to unconducive learning spaces and inability to complete the online requirements. Furthermore, Elmer et al. (2020) showed that amidst the COVID-19 crisis there was a growing sense of isolation among individuals that can lead to an increased likelihood of experiencing adverse social outcomes. This means that understanding others' perspectives can become more challenging when you feel isolated. When you are isolated, you may have limited exposure to diverse viewpoints and experiences which naturally arise through discussions and social interactions, thus, restricting your understanding of others. These findings shed light on the impersonal dynamics of the respondents who experienced learning in an online classroom and their potential implications for social interactions and relationships.

Socio-emotional Dominance

The perceived degree of respondents' socio-emotional dominance is displayed in Table 3. The respondents' socio-emotional dominance is about average. This implies that they may struggle with understanding and regulating their emotions, effectively navigating social interactions, and exhibit less control over their social and emotional reactions compared to their peers.

Results show that 28.42% of the respondents rated themselves with a 3 in terms of handling interpersonal problems. Looking at all those who rated themselves below average, around 64% of the respondents find it hard to handle difficult interpersonal problems. This can be due to the limited physical social interactions which lessened the opportunities to experience how to deal with conflicts and disagreements among friends and peers. The absence of social presence, that sense that the other person is "real," can affect how a person perceives its sense of belongingness and acceptance in a group which can contribute to the feeling of isolation (Cockerham et al., 2021). Social interaction is an important component for social presence. There are studies that highlighted the increase of people at risk of isolation amidst the pandemic due to online learning and lack of interaction. This implies that remote or hybrid learning reduced face-to-face interactions and heightened feelings of isolation which can hinder students' capacity to effectively address and resolve interpersonal problems.

Table 3. Quality levels of social interaction

	Extremely 9		8		7		6		About Average 5		4		3		2		Not at all 1	
Statements on Interpersonal Sensitivity	*f*	*%*		*%*	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*
1. Are you good at understanding other people's points of view?	0	0.00	0	0.00	2	2.11	3	3.16	11	11.58	14	14.74	34	**35.79**	23	24.21	8	8.42
2. Are you willing to help others?	0	0.00	0	0.00	0	0.00	1	1.05	5	5.26	9	9.47	19	20.00	34	**35.79**	27	28.42
Statements on Socio-emotional Dominance																		
3. Do you have good "people skills"?	3	3.16	1	1.05	2	2.11	6	6.32	24	**25.26**	13	13.68	23	24.21	16	16.84	7	7.37
4. Can you handle difficult interpersonal problems?	1	1.05	3	3.16	4	4.21	7	7.37	19	20.00	17	17.89	27	**28.42**	15	15.79	2	2.11
5. Do you express your feelings appropriately?	0	0.00	1	1.05	5	5.26	12	12.63	23	**24.21**	15	15.79	19	20.00	14	14.74	6	6.32
6. Do you handle stress well?	6	6.32	4	4.21	7	7.37	13	13.68	21	**22.11**	16	16.84	18	18.95	7	7.37	3	3.16
7. Are you happy?	3	3.16	3	3.16	2	2.11	16	16.84	24	**25.26**	8	8.42	17	17.89	14	14.74	8	8.42

Then, 25.26% of respondents rated themselves with a 5 (average) for their people skills. However, around 62% rated themselves below average which implies a lack of people skills. People skills are necessary to engage in effective and polite communication and collaboration with others. Robinson (2020) discussed that it was difficult for students to find ways to communicate with other students; misunderstanding can arise, and students may feel nervous in approaching each other during an online setup. This means that an online setup has barriers which may

affect the availability of opportunities to communicate and their subsequent way of communicating with other people.

In relation to happiness, 25.26% rated themselves a 5 or average. Those who rated themselves below average totaled 49.47%, nearly half of the respondents. Similarly, Kakuchi (2021) found that 60% of students reported feelings of unhappiness. Students identified the absence of friends as the main hurdle arising from the shift to online classes, posing a significant challenge for them to overcome. Irawan et al. (2020) found that initially, the students were happy because they could greet each other online but as the online classes went on and students could not leave their houses due to the restrictions, the students started to question the effectiveness of the online setup.

Nearly a quarter (24.21%) of the respondents gave themselves average ratings in expressing their feelings appropriately. However, more than half (56.85%) rated themselves below average on this skill. Robinson (2020) found that lack of interaction or communication with instructors and peers is a major challenge when it comes to online learning. Miscommunication and misunderstanding arise in an online setup. This implies that students may find it challenging to express their feelings appropriately due to the limitations and differences of online communication compared to face-to-face interactions.

Lastly, 22.11% rated themselves as average in managing their stress well. Nearly half (46.32%) rated themselves below average for this skill. The transition to online learning brought about additional sources of stress, including challenges with technology, extended screen time, and feelings of isolation or disconnection (Calonia et al., 2022). Some students were able to adapt well to the online learning environment and effectively manage stress, while others struggled with their stressors.

Effects of The Online Setup on the Quality of Social Interactions

Figure 2 shows the direct relationship of variables to factors and variables to variables.

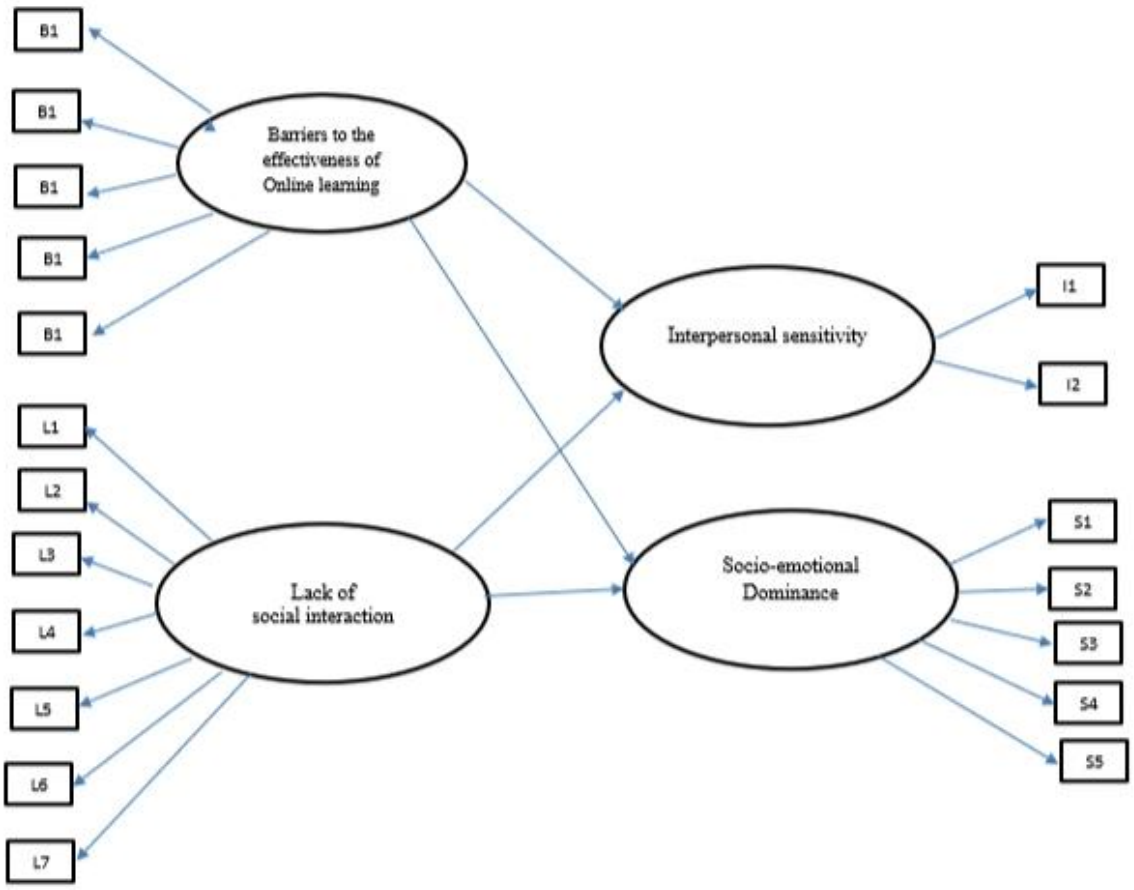

Figure 2. Structural model of the relationship of the variables

Relationship among the Variables

Table 4 shows the results of the test for the relationship among barriers to the effectiveness of online learning, lack of social interaction, interpersonal sensitivity, and social-emotional dominance. Based on the

results, there is a significant positive moderate relationship between lack of social interaction and interpersonal sensitivity, original est. = 0.292, CI = [0.122,0.520]. The lack of social interaction can help predict the quality of interpersonal sensitivity. Results in Table 3 point out that the respondents had low interpersonal sensitivity levels. Montoya-Perez et al. (2024) stated that social interactions and contexts can influence interpersonal sensitivity, leading to adaptive or overwhelming social experiences. Particularly for this study, the lack of social interaction influenced the students' ability to understand other people's points of view and their willingness to help others. Elmer et al. (2020) pointed out that the sense of isolation is the direct consequence of the lack of social interaction. During the pandemic, Polskaya and Razvalyaeva (2020) found that negative affect and loneliness were related to interpersonal sensitivity. When individuals have limited opportunities for social engagement and interaction, it can affect their ability to perceive and respond to social cues, emotions, and the needs of others.

Table 4**.** Relationship between barriers to the effectiveness of online learning to interpersonal sensitivity and social-emotional dominance, and between lack of social interaction to interpersonal sensitivity and social-emotional dominance

	Original Est.	Bootstrap Mean	Bootstrap SD	2.5% CI	97.5% CI
Barriers and IS	0.162	0.158	0.141	-0.281	0.376
Barriers and SD	0.299	0.279	0.202	-0.394	0.523
LSI and IS	0.292	0.332	0.119	0.122	0.520
LSI and SD	-0.068	0.004	0.208	-0.366	0.371

Note. Zero not in the 2.5% CI and 97.5% CI is significant. Barriers to the effectiveness of online learning (Barriers); Lack of social interaction (LSI); Interpersonal sensitivity (IS); Social-emotional Dominance (SD)

However, there is no significant relationship between barriers to the effectiveness of online learning and interpersonal sensitivity, and between barriers to the effectiveness of online learning and social-emotional dominance, lack of social interaction and social-emotional dominance because zero is included in their 2.5% and 97.5% CI. This implies that the level of barriers to the effectiveness of online learning does not help predict the quality of interpersonal sensitivity, and social-emotional dominance.

Relationship Between Online Setup and Social Interaction Quality

Table 5 shows the relationship between online setup and quality of social interaction. Based on the results, there is a significant relationship between online setup and quality of social interaction, est. = 0.19, p-value =0.027. The online setup can present both opportunities and challenges for social interaction as it introduces new modes of communication and requires individuals to adapt to a different social environment. The coefficient of determination, $R^2 = 0.036$, suggests that 3.6% of the variation in the quality of social interactions is explained by the online setup. This suggests that the online setup has a limited impact on the social interaction being measured. The remaining 96.4% of the variation in the social construct shows that there are other variables or factors at play that contribute to this. Robinson (2020) and Wright (2021) found that the quality of social interaction in the online setup can be influenced by factors such as the effectiveness of communication tools, the level of engagement and participation, and the ability to establish meaningful connections in a virtual space. During the online setup, there were limited opportunities for social connectedness with teachers and other learners (Cockerham et al., 2021). Students have less engagement and participation in groupworks which compromised their interaction with peers and establishing connections was hard as it was difficult for students to find ways to communicate with others with less misunderstanding (Robinson, 2020; Wright, 2021).

Table 5. *Relationship between online setup and social interaction quality*

	Est.	p-value	R^2
Online setup and Social interaction	0.19	0.027	0.036

Note. p-value ≤ 0.05 is significant.

IV. CONCLUSIONS AND RECOMMENDATIONS

This study aimed to know the effects of the pandemic online setup to the quality of social interaction of college students. The first objective of the study is assessing the learning set-up experience of the respondents with the use of the standardized scale. Majority of the students found their online learning experience negative compared to traditional classrooms. They expressed difficulties in effective learning, lacked confidence and comfort, and believed they learned better in a regular classroom. Lack of social interaction in the online setting

was also a concern, with students facing challenges in connecting, communicating, and experiencing authentic conversations. Overall, these factors highlight a negative online learning experience, impacting student engagement and satisfaction.

The next objective focused on the perceived quality of social interaction among respondents. Most of the respondents feel that they lack awareness of understanding other people's point of view and lack the readiness to assist others. The findings provide valuable insights into the impersonal dynamics experienced by students in an online classroom setting and the potential consequences for their social interactions and relationships. Majority of the students rated themselves below average in having people skills, in handling stress, in handling difficult interpersonal problems and expressing their feelings appropriately, and in not being happy at all.

The study found a significant relationship between the online setup and the quality of social interaction. There is a weak level of relationship between the two variables which implies that the online setup has a limited impact on the quality of social interaction.

After a thorough analysis of findings and based on the conclusions drawn, the following recommendations are suggested. Firstly, it is recommended to utilize a mixed methods approach to capture both quantitative and qualitative data. This can provide a comprehensive understanding of the phenomenon by combining numerical data on social interaction quality (e.g. Likert scale ratings) with qualitative insights from in-depth interviews of students. This combination can enhance the richness of the findings and provide a more holistic understanding of the problem.

In addition, it might help to consider the theoretical lens of Social Presence Theory to examine the sense of being together and connectedness in the online learning environment. An exploration of how the online tools, communication modes, and instructional strategies influence the development of social presence among college students can be done. Also, further investigation can be done on how social presence relates to the quality of social interactions and students' engagement in online discussions and collaborations.

Lastly, for students, it is recommended to utilize communication tools, actively participate in online discussions, and maintain a healthy work-life balance. To education institutions, they should create opportunities for virtual socialization and provide support for students to engage and communicate effectively. To educators, they should take steps to foster a sense of community and social connection in online learning environments. To future researchers, the socio-demographic characteristics of the respondents can be investigated as variables in determining the relationship between the online setup and the quality of social interaction.

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References

[1]. Artino, A. R. (2009). Online learning: Are subjective perceptions of instructional context related to academic success? *The Internet and Higher Education,* 12(3-4), 117-125. https://doi.org/10.1016/j.iheduc.2009.07.003

[2]. Azmat, M. and Ahmad, A. (2022). Lack of social interaction in online classes during COVID-19. *Journal of Materials and Environmental Science*, 13(2), 185-196. Retrieved January 15, 2023, from https://www.jmaterenvironsci.com/Document/vol13/vol13_N2/JMES-2022-13015-Azmat.pdf

[3]. Baber, H. (2020). Social interaction and effectiveness of the online learning – A moderating role of maintaining social distance during the pandemic COVID-19. *Asian Education and Development Studies,* 11(1). DOI: 10.2139/ssrn.3746111

[4]. Barrot, J. (2018). Facebook as a learning environment for language teaching and learning: A critical analysis of the literature from 2010 to 2017. *Journal of Computer-assisted Learning,* 34(4), 1-13. DOI: 10.1111/jcal.12295

[5]. Barrot, J. S., Llenares, I. I., and del Rosario, L. S. (2021). Students' online learning challenges during the pandemic and how they cope with them: The case of the Philippines. *Education and Information Technologies*, 26(6), 7321–7338. https://doi.org/10.1007/s10639-021-10589-x

[6]. Buenaluz, C. L. (2021, September 14). *UPLB students face 2nd online acad year with 'unresolved' set-up challenges*. UPLB Perspective. Retrieved January 15, 2023, from https://uplbperspective.org/2021/09/14/uplb-students-face-2nd-online-acad-year-with-unresolved-set-up-challenges/

[7]. Carpenter, A. and Greene, K. (2016). Social Penetration Theory. *The International Encyclopedia of Interpersonal Communication.* 1st Edition. Ed. Charles R. Berger and Michael E. Roloff. John Wiley & Sons, Inc. DOI:10.1002/9781118540190.wbeic0160

[8]. Cockerham, D., Lin, L., Ndolo, S. and Schwartz, M. (2021). Voices of the students: Adolescent well-being and social interactions during the emergent shift to online learning environments. *Education and Information Technologies,* 26(6):7523-7541. doi: 10.1007/s10639-021-10601-4.

[9]. Elmer, T., Mepham, K., & Stadtfeld, C. (2020). Students under lockdown: Comparisons of students' social networks and mental health before and during the COVID-19 crisis in Switzerland. *Plos One.* DOI: 10.31234/osf.io/ua6tq

[10]. Irawan, A.W., Dwisona, D., and Lestari, M. (2020). Psychological impacts of students on online learning during the pandemic COVID-19. *KONSELI Jurnal Bimbingan dan Konseling,* ·7(1):53-60. DOI: 10.24042/kons.v7i1.6389

[11]. Kakuchi, S. (2021, November 26). *Student dropout rate due to COVID-19 is still rising*. University World News. Retrieved July 8, 2024 from https://www.universityworldnews.com/post.php?story=202111261339042

[12]. Kumari, S., Gautam, H., Nityadarshini, N., Das, B.K., & Chaudhry, R. (2021). Online classes versus traditional classes? Comparison during COVID-19. *J Educ Health Promot.* 31(10), 457. doi: 10.4103/jehp.jehp_317_21.

[13]. Li, C., & Lalani, F. (2020, April 29). *The COVID-19 Pandemic Has Changed Education Forever. This Is How.* The World Economic Forum. Retrieved May 27, 2023, from https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/

[14]. Long, E., Patterson, S., Maxwell, K., Blake, C., Pérez, R., Lewis, R., McCann, M., Riddell, J., Skivington, K., Wilson-Lowe, R., & Mitchell, K. R. (2021). COVID-19 pandemic and its impact on social relationships and health. *Journal of Epidemiology & Community Health*, 76(20, 128-132. DOI: 10.1136/jech-2021-216690

[15]. Lopes, P. N., Salovey, P., Coté, S., & Beers, M. (2005). Emotion regulation abilities and the quality of social interaction. *Emotion*, 5(1), 113-118. DOI: 10.1037/1528-3542.5.1.113

[16]. Maskari, A., Riyami, T., & Kunjumuhammed, S. K. (2021). Students academic and social concerns during COVID-19 pandemic. *Education and Information Technologies*, 27(1):1-21. doi: 10.1007/s10639-021-10592-2.

[17]. Mehall, S. (2020). Purposeful interpersonal interaction in online learning: what is it and how is it measured. *Online Learning*, *24*(1), 182-204. https://doi.org/10.24059/olj.v24i1.2002

[18]. Montoya-Pérez, K.S., Padrós-Blázquez, F., & Montoya-Pérez, R. (2024). High sensitivity to interpersonal interaction: Development of a measurement. *Psychol Belg*. 31;64(1):214-223. doi: 10.5334/pb.1267

[19]. Ozkul, A., & Kilinc, A. (2018). Evaluation of online distance education experiences of students in Turkey. *The International Review of Research in Open and Distributed Learning*. https://www.irrodl.org/index.php/irrodl

[20]. Pitt, D. (2020, April 8). *Face-to-face learning is better than online*. The Crimson White. Retrieved from https://thecrimsonwhite.com/64870/opinion/face-to-face-learning-is-better-than-online/

[21]. Polskaya N.A. & Razvalyaeva A.Y. (2020). Interpersonal sensitivity in the period of self-isolation: Role in the choice of social distancing measures. *Psychological Science and Education*, 25(6), 63—76 DOI: https://doi org/10 17759/pse 2020250606

[22]. Rita, J. (2020, September 9). *676 private schools to temporarily close operations amid COVID-19 pandemic —DepEd*. GMANetwork.com. Retrieved October 17, 2022, from https://www.gmanetwork.com/news/topstories/nation/754903/676-private-schools-to-temporarily-close-operations-amid-covid-19-pandemic-deped/story/

[23]. Reyes, J. R., Grajo, J., Comia, L., Talento, M. S., Ebal, L., & Mendoza, J. (2021). Assessment of Filipino higher education students' readiness for e-learning during a pandemic: A Rasch technique. *The Philippine Journal of Science*, 150(3): 1007. DOI: 10.56899/150.03.34

[24]. Robinson, M. (2020, October 21). *How online learning can affect social interaction between students*. Quest News. Retrieved December 14, 2022, from https://dalquestnews.org/18959/features/how-online-learning-can-affect-social-interaction-between-students/

[25]. Singh, K., Srivastav, S., Bhardwaj, A., Dixit, A., & Misra, S. (2020). Medical education during the COVID-19 Pandemic: A single institution experience. Indian Pediatrics, 57(7), 678-679. DOI: 10.1007/s13312-020-1899-2

[26]. Spears, L. (2012, January 1). *Social Presence, Social Interaction, Collaborative Learning, and Satisfaction in Online and Face-to-Face Courses*. Doctoral dissertation. IOWA State University. Retrieved November 17, 2022, from https://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=3983&context=etd

[27]. Wright, S. A. (2021). LGBTQ+ College Students' Perceptions of Social Presence and Self-Disclosure in Online Learning: A Single-Case Study. *Graduate Theses and Dissertations* Retrieved from https://scholarworks.uark.edu/etd/4366