



Students' online educational engagement and social relationship through emerging technologies during Covid-19 pandemic

Emmalene Maldepena^{1*}, Sherijane Tamblik²

^{1,2}Mindanao State University, General Santos City, Philippines

E-mail: emmalene.maldepena@msugensan.edu.ph

Received: 26 January 2023

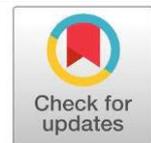
Accepted: 14 March 2023

Published: 31 March 2023

Abstract: The advancements in educational technology have proven to be useful during remote learning amidst pandemic, especially in connecting with social groups. The study aimed to relate students' online educational engagement and social relationships through emerging technologies during the Covid-19 outbreak. Following a descriptive-correlational research design, this study involved one hundred twenty (120) regular third-year Mindanao State University-General Santos City, students. They were officially enrolled during the first semester of 2021-2022. The study used a researcher-made survey questionnaire and interview guide questions, checked, and validated by the experts, to gather the needed data in the study. The weighted mean and Pearson Product-Moment Correlation Coefficient was used to analyze and identify the study results. Findings revealed that the students use social media such as Messenger, Google Meet, Facebook, emails, and other online platforms to communicate with their family, friends, and teachers. Also, it was found that students form social relationships through consistent communication and positive communication. The results indicated that the online educational engagement of the students significantly influences their social relationships. This study recommended that the Faculty of the College of Education, Bachelor of Elementary Education, Mindanao State University-General Santos City, may use other online tools such as Viber for online education to enhance students' online learning further.

Keywords: social relationship; emerging technologies; online education; engagement; Covid-19; learning engagement.

How to cite: Maldepena, E. & Tamblik, S. (2023). Students' online educational engagement and social relationship through emerging technologies during Covid-19 pandemic. *Journal of Science and Education (JSE)*, 3(3): 250-263. <https://doi.org/10.56003/jse.v3i3.218>



INTRODUCTION

The pandemic of Covid-19 is a public health crisis. Burgess & Sievertson (2020) stated that schools, colleges, and universities were shut down (for the right reasons). According to UNESCO, 91.3 percent of the world's students are taught online, with 194 governments ordering country-wide school closures and over 1.3 billion students studying in online classrooms (Waters, 2020). With that, it changed almost 100% of the everyday living people and caused many impacts on the world's different aspects. Now that online education is still one of the interventions to pursue education, and for today's generation, it is questionable what effect will be more specific for the students.

According to a study by Chakraborty et al. (2020), during the Covid19 pandemic, students had mixed feelings about online education. Most students (65.9%) agreed that learning is more accessible in physical classrooms than in online schooling. However, only a minority of students (31.6%) claimed that online education is better than attending MOOCs. Furthermore, Chatterjee & Chakraborty (2020) added that there



had been many advancements in educational technology in the previous few decades, which have shown to be extremely useful during this pandemic.

It was discovered that 7.2 million enrollees prefer modular distance learning, TV and radio-based instructions, and other modalities for the school year 2020-2021, while only 2 million prefer online LESFs (Learner Enrollment and Survey Forms) distributed throughout the enrollment period yielded limited findings process (Hernando-Malipot, 2020). Nonetheless, mapping educational practices in an online world was a problem for universities. Professors and students also faced many logistical, technological, financial, and social issues (Lassoued et al., 2020).

Good self-discipline is a must for online students since they must take the initiative to meet their instructor's deadlines when balancing personal obligations. Many students can easily handle these tasks if they have well-developed organizational skills (Ifie, 2012), however, for undisciplined or unmotivated students, the lack of formal structure may be a trap. Kokemuller (2011) added that students do not have a set meeting time, and they do not have regular, face-to-face contact with teachers and peers who can remind them of tasks and encourage them to work harder.

It was stated by Garcia & Weiss (2020) that uneven access to the computers and internet access needed for online learning is one of the most severe opportunity gaps. Due to the digital divide, some students have found it almost difficult to learn during the pandemic. In addition, students with outdated technological devices can find it challenging to meet specific technical requirements of online learning (Adedoyin & Soykan, 2020). As a result, peer contact is significantly reduced in an online learning environment. Online classrooms often lack a sense of community, which leads to feelings of isolation. They also restrict opportunities to network with others, which can be a drawback as students graduate and begin searching for new jobs (Trent, 2020).

The previous studies revealed that online learning seems to be the intervention for the students to continue their studies but what is lacking is that what are the emerging technologies thus the students frequently used and to what is the extent of their usage. Also, the previous studies did not include online engagement and the social relationship of the students during online learning. There was a limit on the studies that related with this topic. Therefore, the researchers endeavored with this study and aimed to study the emerging technologies that students usually utilize, thus to what extent their engagement in online education and social relationship through emerging technologies. This paper also highlighted how students established social relationships during the pandemic and helped the students and educators through the use of the data gathered.

METHOD

Research Design

This study employed a descriptive-correlational research design. In research investigations, descriptive correlational design is utilized to produce static images of circumstances and establish the relationship between distinct variables (McBurney & White, 2009). The descriptive-correlational research design was applied in this study to determine the focus, which is the students' engagement and the relationship between online educational engagement of the students and the social relationship of the students using emerging technologies.

Respondents

The respondents of this study involved one hundred twenty (120) regular third-year students of Mindanao State University-General Santos City, out of one hundred fifty (150) who were officially enrolled during the first semester of the academic year 2021-2022.

The respondents were all regular students and chosen because of the same availability of time, which were all regular students and the respondents' easy access and communication. Moreover, they were chosen because this study fits their characters regardless of their age, gender, and ethnicity.

Purposive sampling is a non-probability sampling method wherein "components selected for the sample are chosen based on the researcher's judgment." Researchers frequently feel that they may achieve a representative sample by employing sound judgment while saving time and money (Black, 2010).

Instrument

The study used a researcher-made survey questionnaire and interview questions to gather the needed data in the study. The researchers crafted the questionnaire, where the items are focused on the students' engagement. Moreover, the questionnaire stated common applications thus the students were utilized during the educational and social activities, what were the typical activities they did during the online class, how they interacted and communicated with each other during the pandemic, and how they formed social relationships using the emerging technologies.

Furthermore, the instrument used underwent the process of validation with the validation tool provided by the thesis adviser and resulted in a final rating of 5 means very highly valid. The questionnaire is valid and can provide unbiased data, allowing 0-5% error.

In addition to that, the instrument used also underwent a reliability test using the Cronbach Alpha reliability coefficient. According to Statistical Methods and Data Analytics Cronbach's alpha measures internal consistency on how closely related a set of items were as a group. It was considered a measure of scale reliability. This was done in consultation to ask the approval of the thesis adviser for pilot testing and run to the 30 students with the same characteristics as the respondents, which led to the result of 0.94 overall, which means excellent internal consistency.

Data Gathering Procedure

The study used the descriptive-correlational research design to gather data. It underwent thorough consultation with the thesis adviser before conducting an online survey of the respondents to ensure that the survey questionnaire was reliable.

To collect information for this study, the researcher used a Google form as the basis of the data analysis. The researchers obtained the master list of the respondents from the College of Education Students Organization and the students' names whom the researchers can reach out to express the study purpose and help the researchers in conducting the survey questionnaire. In communicating with the respondents, the researchers reached out through a private Facebook message and their group chats to share the message and the Google form link of the survey questionnaire. Once done, the students who took the survey questionnaire received a 20 pesos load as a token of appreciation for their time and effort.

Furthermore, the researchers also informed the respondents of the overview and purpose of the study. The researchers ensure the privacy of the information from the data gathered. In retrieving the data, it runs between 1-2 weeks, and researchers used the frequency and mean percentage of a descriptive statistical treatment, Pearson product-moment correlation, and Thematic Analysis.

Statistical Treatment

To analyze the gathered data of this study, frequency distribution and the weighted mean were computed. A five-point scale was used to describe the emerging technologies thus the student utilizes, the extent of online educational engagement, and the extent of social relationships through emerging technologies. The numerical gradations of the five-point scale are as follows.

Table 1. The Scale of Verbal Interpretation

Scale	Range	Description	Verbal Interpretation
1	4.50-5.00	Always	Very Great Extent
2	3.50-4.49	Often	Great Extent
3	2.50-3.49	Sometimes	Average Extent
4	1.50-2.49	Rarely	Low Extent
5	1.00-1.49	Never	Very Low Extent

The survey questionnaire consisted of (3) parts for rating scale, and specify these are the following: Part 1: The Emerging Technologies with consisted of 11 items ranging from never (1) to always (5), Part 2: The Online Educational Engagement with consisted of 15 items ranging from never (1) to always (5), Part 3: The Social Relationships of students through emerging technology with consisted of 15 items ranging from never (1) to always (5).

Further, to interpret the relationship between online educational engagement and social relationships among students through emerging technologies, the Pearson Moment Coefficient technique was used.

Data Analysis

The interview question consisted of 1 principal question with four sub-questions that focused on how the students formed social relationships using the emerging technologies during the pandemic. To interpret the interview questions of the study, a Product moment tool was used.

The "Pearson r" statistic, also referred to as the Pearson product-moment correlation coefficient, is a measurement of the correlation of both variables separated by the result of their standard deviation. Researchers find value in how both variables differ in regard to one another while calculating a correlation coefficient. The Pearson r has two key presumptions: first, it may only be employed with ratio or interval data, and second, the data must be regularly distributed (Prion & Haerling, 2014).

Moreover, it focuses on familiarizing, analyzing, and interpreting data patterns or themes in this study. First, the researchers gathered the interview transcripts from the Google form and then transferred them to a word file to be put on a table form for easy familiarizing. The second was the coding and analysis of the data. The researchers highlighted words that the respondents commonly stated, highlighted words that relate to each other, and crossed out answers unrelated to the question. Last was generating themes, and the researchers came up with the phrases that best describe the data gathered from the respondents.

RESULTS AND DISCUSSION

Table 1 presents the emerging technologies students utilized for educational and social activities during the pandemic. The students always use Messenger with weighted mean of 4.90, Google Meet weighted mean of 4.64, and Facebook with a weighted mean of 4.50.

Table 1. Emerging Technologies that Students Utilize for Educational and Social Activities during the Pandemic

Indicator	Weighted Mean	Description
1. I am using Facebook.	4.50	Always
2. I am using Google Meet.	4.64	Always
3. I am using Zoom.	2.78	Sometimes
4. I am using Viber.	1.31	Never
5. I am using Messenger.	4.90	Always
6. I am using Instagram.	3.78	Often
7. I am using Telegram.	3.45	Sometimes
8. I am using Youtube.	4.44	Often
9. I am using TikTok.	3.03	Sometimes
10. I am using Twitter.	3.04	Sometimes
Overall mean	3.59	Often

The technologies that the students always use are those technologies or applications that are popular and commonly used by people worldwide, particularly in everyday online activities. These are also easy-to-use, convenient, and data-friendly technologies. This further indicates that supports the finding of Fansury (2020) that these technologies are the ones that can aid in the learning process, specifically during the Covid-19 epidemic, because they are readily available and accessible.

On the other hand, they sometimes use TikTok with a weighted mean of 3.03 and Zoom with weighted mean of 2.78. The technologies that the students sometimes use are those technologies that give entertainment and are used for the special virtual event. [Bossen and Kottasz \(2020\)](#) concluded that the technologies sometimes used are the ones that are lighthearted fun and thus nothing to be concerned about. The application that is fun and the gratifications of self-expression, identity creation, and fame-seeking were found to be the essential gratifications sought.

However, they never use Viber because of a weighted mean of 1.31. The technology that has never been used is the technology that is unfamiliar and unpopular to the students. Technology that the students did not use well; it was discovered that students naturally prefer the software they use for personal communication over unfamiliar software prescribed to them ([Brisco, 2016](#)).

Overall, the mean of 3.59 is described as often. This implies that the students used emerging technologies such as Messenger, Google Meet, and Facebook for educational and social activities during the pandemic. However, they never use Viber.

The findings support the study of [Kshetri \(2020\)](#) stated that Facebook's messaging services saw a 50 percent increase in usage, with video messaging seeing a 100 percent increase. Moreover, according to [Constine \(2018\)](#), 2.5 billion people utilize at least one of its apps: Facebook, Instagram, WhatsApp, or Messenger. This compared to 2.23 billion monthly Facebook users, 1 billion Instagram users, 1.5 billion WhatsApp users, and 1.3 billion Messenger users. Additionally, social networking websites are used by between 67% and 75% of college students. Facebook is the most popular social media website, with research indicating between 85% and 99% percent of college students use Facebook ([Junco, 2012](#)).

Table 2. Extent of Online Educational Engagement done by the Students

Indicator	Weighted Mean	Description
1. I attend synchronous classes on Google meet or Zoom.	4.78	Always
2. I am confident sharing my thoughts during an online class.	3.69	Often
3. I raise questions to clarify some information that is not clear during online discussion.	3.33	Sometimes
4. I actively participate in recitation during an online class.	3.80	Often
5. I can easily understand my teacher's lessons during online discussions.	3.71	Often
6. I look for educational videos on the internet that will supplement my learning needs.	4.15	Often
7. I post and share my reflection online in our class discussion.	3.56	Often
8. I look for articles with reliable sources that will help me with my assignment and project.	4.44	Often
9. I create video and virtual presentations for online class.	4.19	Often
10. I attend webinars and online training to enhance my knowledge and skills.	4.38	Often
11. I communicate online with my classmates to discuss ideas for group activities.	4.81	Always
12. I actively participate in online group meetings using google meet or Zoom.	4.49	Often

13. I keep myself updated on the progress of our group task through the group chat.	4.71	Always
14. I comment and share educational posts on Facebook.	3.87	Often
15. I participate in answering evaluation form about the online webinars and trainings I attend.	4.49	Often
Mean	4.16	Often

Table 2 shows the extent of online educational engagement done by the students. The students always communicate online with their classmates to discuss ideas for group activities with weighted mean of 4.81, they attend synchronous classes on Google meet or Zoom with a weighted mean of 4.78, and they keep themselves updated on the progress of their group task through the group chat with weighted mean of 4.71.

Students always attend synchronous classes using Google meet or Zoom because it is essential and required for their good learning. Besides, the students' technologies are all accessible and easy to use for them to be easily updated by their classmates and teachers. This support by the finding of [Sari & Octaviani \(2021\)](#), that the students heavily participate in their online classes and studies. They exchange their ideas and information to understand lessons and learning materials by interacting with their groupmates and establishing connections among teachers and peers.

On the other hand, the students often actively participate in online group meetings using google meet or Zoom because of the weighted mean of 4.49 and participate in answering evaluation form about the online webinars and trainings they attended with weighted mean of 4.49. In addition, they look for articles with reliable sources that will help them with their assignment and project with a weighted mean of 4.44. Students only attend meetings and answer evaluation forms when required by their teachers and organizations, which only happens often and when there is no problem with internet connections. Further, according to [Dumbford and Miller \(2018\)](#), there are also some sacrifices made by online learners when it comes to an informative learning program, such as unstable internet connectivity, electric power interruption, etc., that made them frequently attend group meetings online webinars, and training.

While it can be observed that the students sometimes raise questions to clarify some information that is not clear during online discussion because of the weighted mean of 3.33. It is also noticeable that while they are engaged online, they are not maximizing the potential of technology to deeper their understanding of the lessons or topics presented to them.

The finding support by [The Tenney School \(2016\)](#), that students' fear of appearing dumb, shy, having difficulty forming the questions, etc., made them decide not to raise questions to clarify some information that is not clear during online discussion. Overall, the extent of online educational engagement of the students got a mean of 4.16 is described as often. This implies that the students have a great extent of online educational engagement. They are constantly communicating online with their classmates to discuss ideas for group activities, attending synchronous classes on Google meet or zoom, and keeping themselves

updated on the progress of their group task through the group chat using emerging technologies during the pandemic.

In addition, according to the study conducted by [Martin & Bolliger \(2018\)](#), over 78% believe that students work cooperatively to accomplish case studies, projects, reports, and other tasks by utilizing online communication tools, and 76.1% said it was essential for learners to communicate with classmates through student demonstrations. With that, this also supports the study of [Romero-Ivanova et al. \(2020\)](#) stated that zoom enabled students to construct collaborative workplaces as though they were on campus. It allowed the class to work on their assignment throughout the course, which was beneficial. It aided in completing tasks and projects and enabled them to maintain contact with peers. Moreover, according to [Adipat \(2021\)](#), online learning has improved interaction between teachers and students by allowing them to continue teaching and learning outside of the classroom.

Table 3. Extent of Social Relationship of Student through Emerging Technologies

Indicator	Weighted Mean	Description
1. I connect with my friends through various social media platforms.	4.77	Always
2. I communicate with my teacher using various online resources.	4.31	Often
3. I pass my assignments and activities to my teacher through various online resources.	4.70	Always
4. I share written materials with my classmates through various online resources.	4.25	Often
5. I share video materials with my classmates through various online resources.	4.32	Often
6. I share learning materials with my classmates through various online resources.	4.36	Often
7. I share educational posts with my acquaintances through various social media platforms.	4.03	Often
8. I send messages to my teacher about my concerns through various social media.	3.97	Often
9. I share the news that I have read to my parents/relatives using social media platforms.	3.89	Often
10. I tag posts to my friends, classmates, and relatives using social media platforms.	4.03	Often
11. I participate with my group in a group tasking through various social media.	4.67	Always
12. I help my fellow students through various social media.	4.37	Often
13. I reply to my teachers’ announcements on various social media platforms.	3.91	Often
14. I interact with other participants in course-related webinars through various online resources.	3.87	Often
15. I share extra resources with my friends through various social media platforms.	4.27	Often
Mean	4.25	Often

Table 3 displays the extent of social relationship of student through emerging technologies. The students always connect with their friends through various social media platforms because of the weighted mean 4.77. They pass their assignments and activities to their teacher through various online resources with a weighted mean of 4.70. They also participate with their group in a group tasking through various social media with

weighted mean of 4.67. Students utilize very convenient and easy technologies because of their availability and accessibility to maintain and strengthen their social relationships. They can connect with their friends, pass their assignments, and participate in their group tasks easily.

Besides, according to the study of [Hampton et al. \(2011\)](#), researchers have proved that connecting on social media helps them interact with friends, stay in touch with extended family, and get assistance through tough times. On the other hand, they often help their fellow students through various social media because of a weighted mean 4.37. They share learning materials with their classmates through various online resources with a weighted mean of 4.36, and they communicate with their teachers using various online resources with a weighted mean of 4.31. In addition, they often share the news that they have read to their parents and relatives using social media platforms with a weighted mean of 3.89, and they interact with other participants in course-related webinars through various online resources with a weighted mean of 3.87.

Some students are not confident with their worksheets, assignments, marks, etc., which makes them uncertain if they will share them with their friends, teachers, and family using various online resources. Furthermore, students focused on the content of the speakers and webinars they attended than interacting with other participants, which were only required often.

This support by the study of [Dumbford & Miller \(2018\)](#), student-faculty interaction appeared to be less favorable in web-based learning situations. Furthermore, students focused on the content of the speakers and webinars they attended than interacting with other participants, which were only required often.

Overall, the extent of social relationship of students through emerging technologies got a mean of 4.25 is described as often. This implies that the students are forming social relationships through emerging technologies to a great extent. They are always connected with their friends through various social media platforms, pass their assignments and activities to their teacher through various online resources, and participate with their group in a group tasking through various social media during the pandemic.

It was reflected in the study of [Kintu et al. \(2017\)](#) that 74% of students said technological tools helped them interact, collaborate with peers, and reflect on their learning; 71% said online materials were well-organized, user-friendly, and easy to find; and 57% said they collaborate with peers by posting. Additionally, as [Klingensmith \(2010\)](#) stated, social media sites enable learners to build a relationship with their relatives and friends while also creating a new social support system and adjusting to student life. Further, according to [Quinones & Adams \(2021\)](#), digital technologies are an essential learning tool that allows children to build a social context conducive to their growth.

Table 4. Relationship between Online Educational Engagement and Social Relationships among Students through Emerging Technologies

Variables Correlated	r	r ²	p-value	Extent of Relationship	Remark
Online Activities and Social Relationships	.549	.301	.000	Moderate	Significant

A Pearson's product-moment correlation (Pearson r) is computed to assess the relationship between online educational engagement and social relationships among students through emerging technologies. There is a **significant moderate positive correlation** between online educational engagement and social relationships among students through emerging technologies, $r(120) = .549, p = .000 < .05$, explaining 30.1% of the variations in the social relationships among students through emerging technologies. The other 69.9% of the variations are due to other variables. According to [Kim et al. \(2011\)](#), media integration, quality instruction, interactivity, and gender influence the social relationship of the students.

The results implies that the online educational engagement of the student significantly influences their social relationships through emerging technologies. Moreover, it shows the increase in the relationship between the two variables. Meanwhile, the students have a great extent of online educational engagement. They also have a great extent of social relationships because of the activities related to school they have done, the webinars they attend, and the requirements for their study that need to comply.

As supported by the study of [Ma et al. \(2011\)](#), online learning is based on connecting to a larger pool of learning resources and peers who may help individual students, such as through discussion forums, collaborative learning, and community development. Thus, knowledge sharing in online learning is unlikely to occur without regular and consistent engagement. According to one study, there is a link between how students evaluate their relationships with their peers and professors, how they describe the overall quality of their educational experience, and how they use a range of social media tools ([Rutherford, 2010](#)).

Forming Social Relationship during Pandemic through Emerging Technologies

The study was also focused on how the students form a social relationship through emerging technologies during the pandemic. The respondents stated two (2) themes that refer to the strategies they employ to form a social relationship during the pandemic. The following are the findings made based on the thematic analysis and these are: Consistent Communication and Positive Communication.

Consistent Communication. The students consistently communicate with their friends, family, and teachers to form a social relationship through emerging technologies during the pandemic. They always contacted them through chats or video calls because it was an easy yet very convenient strategy to keep in touch and strengthen their relationship despite their distance.

Moreover, the following excerpts were some responses that claimed that consistent communication was the strategy they used to form social relationships during the pandemic through emerging technologies. Other responses could be found on the page in the appendix section.

This means that the students consistently communicated to establish and improve social relationships with their friends, family, and teachers. It is their new way and a new strategy to form a social relationship despite the changes brought by the pandemic. The students always communicate, continually update others, and keep posted on everything through emerging technologies.

Researchers have found that remote learning combined with consistent communication improves social relationships ([Utomo et al., 2020](#)). Further, [Su \(2016\)](#) claims that staying connected always leads to a constant sense of togetherness. Moreover, students in online settings can communicate with other students and the instructor for extended periods. This creates an advantage that relationships formed online are stronger ([Imlawi et al., 2015](#)).

Positive Communication. The students employed positive communication in forming social relationships with their friends, family, and teachers. The students started to connect with other people through positive approaches, such as sending messages with kindness, respect, and more. Additionally, the following excerpts were the responses that claimed that communication positively was the strategy they employed to form social relationships during the pandemic through emerging technologies.

This means that having positive communication is one of their strategies to enhance and strengthen their social relationship with their friends, family, and teachers during this pandemic. Being kind and communicating with respect is what the students are always doing every time they are connecting with them through emerging technologies.

According to [Anderson \(2020\)](#), participation in online education, speaking enthusiastically and joyfully about schoolwork, then emphasizing intrinsic encouragement, creates engagement and express a tone of warmth and friendliness. [Stallman et al. \(2018\)](#) stated that the importance of receiving social support and kindness backs up the idea that some people need to be encouraged and treated well by others to build a positive relationship of how to approach and treat one another. Furthermore, the more time students spend establishing warm attitudes, the more comfortable their relationships with others become ([Kok et al., 2013](#)).

Overall, the students form social relationships through consistent communication and positive communication. The researchers came up with the two themes and lead to the findings that students consistently communicated and positively communicated to form social relationships during the pandemic through emerging technologies. The students employed these strategies to ensure that their social relationships would be formed, established, and improved despite the distance and restrictions brought by the Covid-19 outbreak.

Hence, with the use of these strategies it can help the students form social relationships with their friends, family, and teachers during the pandemic, the student's sense of belonging, care, and love for other people will be shown and develop.

Even more, one study found that communication and support directly impact students' sense of belonging and that there are specific characteristics of teaching practice that satisfy this essential relational requirement. Students' sense of belonging methods are crucial aspects of effective teaching; they allow students to be successful and independent learners ([Osterman, 2010](#)). Nevertheless, people can achieve a lot by speaking with others consistently and pleasantly. People are born into relationships and spend their lives in friendships, family networks, romantic partnerships, marriages, and professional ties. Indeed, studies

reveal that when people talk, new topics arise, which helps them gain higher happiness in their close encounters (Guerrero et al., 2017).

CONCLUSION

Based on the findings, it was found that the students use emerging technologies such as Messenger, Google Meet, and Facebook for educational and social activities during the pandemic. Furthermore, the students have a great extent of online educational engagement. The results also revealed that the students are forming social relationships through emerging technologies to a great extent. In addition, the online educational engagement of the study significantly influenced their social relationships through emerging technologies. Moreover, the students form social relationships through consistent communication and positive communication.

REFERENCES

- Adedoyin, O. B., & Soykan, E. (2023). Covid-19 pandemic and online learning: the challenges and opportunities. *Interactive learning environments*, 31(2), 863-875. <https://doi.org/10.1080/10494820.2020.1813180>
- Adipat, S. (2021, September). Why web-conferencing matters: Rescuing education in the time of COVID-19 pandemic crisis. In *Frontiers in Education* (Vol. 6, p. 752522). Frontiers Media SA. <https://doi.org/10.3389/educ.2021.752522>
- Anderson, M. (2020). Communicating with students effectively during online learning. Retrieved from: <https://inservice.ascd.org/communicating-with-students-effectively-during-online-learning/>
- Black, K. (2010) "Business Statistics: Contemporary Decision Making" 6th edition, John Wiley & Sons
- Bossen, C. B., & Kottasz, R. (2020). Uses and gratifications sought by pre-adolescent and adolescent TikTok consumers. *Young consumers*.
- Brisco, R., Whitfield, R. I., & Grierson, H. (2016). Recommendations for the use of social network sites and mobile devices in a collaborative engineering design project. In *DS 83: Proceedings of the 18th International Conference on Engineering and Product Design Education (E&PDE16), Design Education: Collaboration and Cross-Disciplinarity, Aalborg, Denmark, 8th-9th September 2016* (pp. 394-399).
- Burgess, S., & Sievertsen, H. H. (2020). Schools, skills, and learning: The impact of COVID-19 on education. *VoxEu. org*, 1(2).
- Chakraborty, P., Mittal, P., Gupta, M. S., Yadav, S., & Arora, A. Opinion of students on online education during the COVID-19 pandemic. *Human Behavior and Emerging Technologies*. <https://onlinelibrary.wiley.com/doi/10.1002/hbe2.240>
- Chatterjee, I., & Chakraborty, P. (2021). Use of information communication technology by medical educators amid COVID-19 pandemic and beyond. *Journal of Educational Technology Systems*, 49(3), 310-324. <http://dx.doi.org/10.1177/0047239520966996>
- Constine, J. (2018). 2.5 billion people use at least one of Facebook's apps. Techcrunch.

- Dumford, A. D., & Miller, A. L. (2018). Online learning in higher education: exploring advantages and disadvantages for engagement. *Journal of computing in higher education*, 30, 452-465. <https://doi.org/10.1007/s12528-018-9179-z>
- Fansury, A. H., Januarty, R., & Ali Wira Rahman, S. (2020). Digital content for millennial generations: Teaching the English foreign language learner on COVID-19 pandemic. *Journal of Southwest Jiaotong University*, 55(3). <https://doi.org/10.35741/issn.0258-2724.55.3.40>
- García, E., & Weiss, E. (2020). COVID-19 and Student Performance, Equity, and US Education Policy: Lessons from Pre-Pandemic Research to Inform Relief, Recovery, and Rebuilding. *Economic Policy Institute*. <https://eric.ed.gov/?id=ED610971>
- Guerrero, L. K., Andersen, P. A., & Afifi, W. A. (2017). *Close encounters: Communication in relationships*. Sage Publications.
- Hampton, K., Goulet, L. S., Rainie, L., & Purcell, K. (2011). Social networking sites and our lives. Pew Research Center. *internet] available at URL:< http://www. pewinternet. org/~media/Files/Reports/2011/PIP.*
- Hernando-Malipot, M. (2020). DepEd: Most students prefer ‘modular’ learning over online. *Manila Bulletin*. <https://mb.com.ph/2020/07/03/depd-most-students-prefer-modular-learning-over-online>.
- Ifie, C. (2012). What Are the Benefits of Online College?. Retrieved from <https://education.seattlepi.com/advantages-online-colleges-1082.html>
- Imlawi, J., Gregg, D., & Karimi, J. (2015). Student engagement in course-based social networks: The impact of instructor credibility and use of communication. *Computers & Education*, 88, 84-96. <https://doi.org/10.1016/j.compedu.2015.04.015>
- Junco, R. (2012). Too much face and not enough books: The relationship between multiple indices of Facebook use and academic performance. *Computers in human behavior*, 28(1), 187-198. <https://doi.org/10.1016/j.chb.2011.08.026>
- Kim, J., Kwon, Y., & Cho, D. (2011). Investigating factors that influence social presence and learning outcomes in distance higher education. *Computers & Education*, 57(2), 1512-1520. <https://doi.org/10.1016/j.compedu.2011.02.005>
- Kintu, M. J., Zhu, C., & Kagambe, E. (2017). Blended learning effectiveness: the relationship between student characteristics, design features and outcomes. *International Journal of Educational Technology in Higher Education*, 14(1), 1-20. <https://doi.org/10.1186/s41239-017-0043-4>
- Klingensmith, C. L. (2010). 500 friends and still friending: The relationship between Facebook and college students’ social experiences.
- Kok, B. E., Coffey, K. A., Cohn, M. A., Catalino, L. I., Vacharkulksemsuk, T., Algoe, S. B., ... & Fredrickson, B. L. (2013). How positive emotions build physical health: Perceived positive social connections account for the upward spiral between positive emotions and vagal tone. *Psychological science*, 24(7), 1123-1132. <https://doi.org/10.1177/0956797612470827>
- Kokemuller, N. (2011). The Advantages & Disadvantages of Online Classes Used in Colleges.
- Kokemuller, N. (2011). What Are the Positive & Negatives With Online Learning?. Retrieved from <https://education.seattlepi.com/advantages-disadvantages-online-classes-used-colleges-1020.html>
- Kshetri, N. (2020). Covid-19 meets big tech. *Computer*, 53(8), 10-13.
- Lassoued, Z., Alhendawi, M., & Bashitialshaaer, R. (2020). An exploratory study of the obstacles for achieving quality in distance learning during the COVID-19 pandemic. *Education sciences*, 10(9), 232. <https://doi.org/10.3390/educsci10090232>
- Ma, W. W., & Yuen, A. H. (2011). Understanding online knowledge sharing: An interpersonal relationship perspective. *Computers & Education*, 56(1), 210-219. <https://doi.org/10.1016/j.compedu.2010.08.004>

- Martin, F., & Bolliger, D. U. (2018). Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online learning*, 22(1), 205-222. <https://eric.ed.gov/?id=EJ1179659>
- McBurney, D. & White, T. (2009). *Research Methods*. New York, NY: Cengage Learning.
- Osterman, K. F. (2010). Teacher practice and students' sense of belonging. *International research handbook on values education and student wellbeing*, 239-260. https://doi.org/10.1007/978-90-481-8675-4_15
- Prion, S., & Haerling, K. A. (2014). Making sense of methods and measurement: Pearson product-moment correlation coefficient. *Clinical simulation in nursing*, 10(11), 587-588. <https://doi.org/10.1016/j.ecns.2014.07.010>
- Quinones, G., & Adams, M. (2021). Children's virtual worlds and friendships during the covid-19 pandemic: visual technologies as a panacea for social isolation. *Video Journal of Education and Pedagogy*, 5(1), 1-18. https://brill.com/view/journals/vjep/5/1/article-p1_10.xml
- Romero-Ivanova, C., Shaughnessy, M., Otto, L., Taylor, E., & Watson, E. (2020). Digital practices & applications in a COVID-19 culture. *Higher Education Studies*, 10(3), 80-87. <https://eric.ed.gov/?id=EJ1264741>
- Rutherford, C. (2010). Using online social media to support preservice student engagement. *MERLOT Journal of Online Learning and Teaching*, 6(4), 703-711.
- Sari, F. M., & Oktaviani, L. (2021). Undergraduate Students' Views on the Use of Online Learning Platform during COVID-19 Pandemic. *Teknosastik*, 19(1), 41-47. <https://doi.org/10.33365/ts.v19i1.896>
- Stallman, H. M., Ohan, J. L., & Chiera, B. (2018). The role of social support, being present and self-kindness in university student well-being. *British Journal of Guidance & Counselling*, 46(4), 365-374. <https://doi.org/10.1080/03069885.2017.1343458>
- Su, H. (2016). Constant connection as the media condition of love: Where bonds become bondage. *Media, Culture & Society*, 38(2), 232-247. <https://doi.org/10.1177/0163443715594037>
- The Tenney School, (2016). When Students Do Not Ask Questions in Class. Retrieved from: <https://tenneyschool.com/when-students-do-not-askquestions-in-class/>
- Trent, A. (2020). Disadvantage of Online Learning Communities. Retrieved from: <https://education.seattlepi.com/benefits-online-college-1165.html>
- Utomo, M. N. Y., Sudayanto, M., & Saddhono, K. (2020). Tools and strategy for distance learning to respond COVID-19 pandemic in Indonesia. *Ingénierie des Systèmes d'Information*, 25(3), 383-390.
- Waters, L. (2020). Six Online Activities to Help Students Cope With COVID-19. Retrieved from https://greatergood.berkeley.edu/article/item/six_online_activities_to_help_students_cope_with_covid_19