Challenges in Student Communication Encountered in Virtual Learning Environments

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Abstract

The research article presents an extensive examination of the challenges students encounter in virtual learning environments. The study employed a survey research approach with a rating scale to gather data, revealing key insights into the perceptions of students at the higher education level. The data shows that these challenges vary in intensity, with some students experiencing milder difficulties and others facing more pronounced obstacles, emphasizing the complex nature of online education's impact on student communication. Further analysis breaks down the findings by gender, urban/rural residence, and IT skills. Notably, all groups reported challenges in social isolation and interaction, shedding light on the widespread nature of these issues. Even students with good IT skills faced communication challenges, indicating that technical proficiency alone may not address these difficulties. Recommendations include implementing training programs for educators and students, devising strategies to reduce communication challenges, and considering a blended approach to education that combines in-person and virtual learning to provide a more balanced educational experience.

Keywords: *Virtual Learning, Interaction, Interest, Social Isolation*

1. Introduction

Effective communication is a cornerstone of human interaction, playing a pivotal role in our personal, professional, and social lives. It serves as the glue that binds individuals and communities together, enabling the exchange of ideas, emotions, and information. In the realm of business and

leadership, communication is a linchpin for success, as it fosters collaboration, clarity, and a shared vision among team members. Effective communication is also vital for resolving conflicts and making informed decisions, ultimately driving productivity and achieving organizational goals. In our personal lives, communication is the key to building and maintaining relationships. It allows us to express our thoughts, feelings, and desires, while also understanding the perspectives and needs of others. Whether it's through spoken words, written messages, body language, or even non-verbal cues, effective communication is a fundamental skill that empowers us to connect with others, foster empathy, and build trust.

Additionally, in the digital age, the speed and ease of communication have greatly accelerated, making it even more crucial to adapt to various communication channels and technologies. Social media, email, video conferencing, and other digital platforms have transformed the way we connect with others and disseminate information. The ability to navigate and harness these tools to effectively communicate has become an essential skill in both personal and professional spheres. In essence, communication is the linchpin of human society, shaping our relationships, progress, and the way we navigate the complexities of the modern world.

Inadequate mutual impact from in-person instruction is another major issue related to online learning. Also, it plays a role in examining everything that is in the online guide and is typically discussed with the point guide via computer post, which requires movement time.[1] Online education, once considered a supplement to traditional classroom learning, has become a mainstream mode of instruction with the advent of digital technology and the internet. This

[1] Bao-Liang Zhong et al., "Knowledge, Attitudes, and Practices towards Covid-19 among Chinese Residents during the Rapid Rise Period of the Covid-19 Outbreak: A Quick Online Cross-Sectional Survey," *International Journal of Biological Sciences* 16, no. 10 (2020): 1745–52, doi:10.7150/ijbs.45221.

transformation has ushered in a new era of education, offering both challenges and opportunities that shape the way we learn and teach.

A prominent challenge in online education is the digital divide. Not all students have access to high-speed internet and suitable devices. This inequality in access hinders the ability of marginalized communities to participate in online learning, exacerbating educational disparities. The absence of face-to-face interactions in online education can lead to difficulties in student engagement and motivation. The remote nature of online learning can make students feel isolated and detached from the learning process, potentially impacting their enthusiasm for education. Maintaining consistent quality in online courses and assessments is a concern. Ensuring that online education meets the same rigorous standards as traditional in-person education requires diligent oversight.[2] Inconsistent quality across different online programs can undermine trust in the effectiveness of digital education.

Technical challenges are a common occurrence in online learning, including issues with internet connectivity and the usability of online platforms. These challenges can disrupt the learning experience and create frustration for both students and educators. Adequate technical support and training are crucial but may not always be readily available.[3]

On the other side, Markus, (2020) was of the view that online education has the potential to break down geographical barriers. Educational institutions can extend their reach beyond their physical locations, enabling them to connect with a global student population. This global reach provides

[2] Cathy Mae Toquero, "Challenges and Opportunities for Higher Education amid the COVID-19 Pandemic: The Philippine Context," *Pedagogical Research* 5, no. 4 (2020), doi:10.29333/pr/7947.

[3] Mahsood Shah and Ming Cheng, "Exploring Factors Impacting Student Engagement in Open Access Courses," *Open Learning: The Journal of Open, Distance and e-Learning* 34, no. 2 (2018): 187–202, doi:10.1080/02680513.2018.1508337.

students with access to a diverse range of educational options.[4] Online learning offers unparalleled flexibility. Students can choose when and where they engage with educational content, allowing them to balance their studies with work, family, and other commitments.[5] Additionally, online education supports personalized learning experiences, with students progressing at their own pace and selecting courses aligned with their individual interests and career goals.

According to Rasmitadila, (2020), technology has brought innovative teaching tools and resources to the forefront.[6] Virtual labs, interactive simulations, multimedia content, and other digital assets enhance the learning experience, making complex concepts more accessible. These tools empower educators to experiment with new teaching methods, enriching the educational process. Online education can be cost-effective for both students and institutions. Reduced overhead costs associated with physical infrastructure and the ability to scale online programs can lead to more affordable education options. This cost-efficiency can increase access to education and reduce the financial burden on students.

In conclusion, online education has evolved into a dynamic field, offering a complex interplay of challenges and opportunities. While the digital divide, engagement issues, quality control, and technical challenges require careful attention, the global reach, flexibility, innovative tools, and cost-efficiency of online education hold promise for the future. As technology continues to advance, and educators adapt to the changing landscape, striking a balance between these

[4] Markus Deli Girik Allo, "Is the Online Learning Good in the Midst of Covid-19 Pandemic? The Case of EFL Learners," *Jurnal Sinestesia* 10, no. 1 (April 2020): 1–10.

[5] V Raju and P.S Phung, "Understanding Flamboyancy of Globalization through Higher Educational Economics: Limkokwing Integrated Model on Economics (LIME)," *International Journal of Global Business* 11, no. 2 (2018): 40–50.

[6] Rasmitadila Rasmitadila et al., "The Perceptions of Primary School Teachers of Online Learning during the COVID-19 Pandemic Period: A Case Study in Indonesia," *Journal of Ethnic and Cultural Studies*, 2020, 90–109, doi:10.29333/ejecs/388.

challenges and opportunities will determine the success of online education in meeting the diverse needs of learners in the 21st century.[7]

Secondary school mathematics teachers' views on e-learning implementation barriers are a critical topic that sheds light on the challenges faced by educators when incorporating digital tools and resources into their teaching methods. Firstly, it's important to recognize that e-learning can be a powerful tool for enhancing mathematics education. It provides access to a vast array of digital resources, interactive simulations, and opportunities for personalized learning.[8] However, many secondary school mathematics teachers encounter various barriers when trying to implement e-learning effectively.

One of the primary barriers often cited by mathematics teachers is the lack of access to technology and reliable internet connectivity for both students and educators. Without access to necessary tools and a stable internet connection, the potential benefits of e-learning cannot be fully realized.[9] This issue highlights the digital divide that exists among students and can lead to inequalities in educational outcomes.

According to Levin, & Wadmany, (2019), another common barrier is the resistance to change, both on the part of educators and students. Some teachers may be hesitant to adopt e-learning due to concerns about their own digital literacy and the time required to adapt their teaching methods.[10] Similarly, students may resist e-learning if they are more comfortable with traditional methods or

[7] Christi Pace, Stacie Pettit, and Kim Barker, "Best Practices in Middle Level Quaranteaching: Strategies, Tips and Resources amidst COVID-19," *Becoming: Journal of the Georgia Middle School Association* 31, no. 1 (2020): 2–13, doi:10.20429/becoming.2020.310102.

[8] Mailizar Mailizar et al., "Secondary School Mathematics Teachers' Views on e-Learning Implementation Barriers during the COVID-19 Pandemic: The Case of Indonesia," *Eurasia Journal of Mathematics, Science and Technology Education* 16, no. 7 (2020), doi:10.29333/ejmste/8240.

[9] Shih-Hwa Liu and Gwo-Guang Lee, "Knowledge Sharing Behavior in E-Learning Materials Developing Team," *Procedia - Social and Behavioral Sciences* 64 (2012): 681–90, doi:10.1016/j.sbspro.2012.11.080.

[10] Tamar Levin and Rivka Wadmany, "Listening to Students' Voices on Learning with Information Technologies in a Rich Technology-Based Classroom," *Journal of Educational Computing Research* 34, no. 3 (2006): 281–317, doi:10.2190/ct6q-0wdg-cddp-u6tj.

if they face technical difficulties. Inadequate professional development and training is another significant challenge. Mathematics teachers need support and training to effectively integrate e-learning into their curriculum. Without proper guidance, teachers may struggle to use e-learning resources to their full potential, resulting in less effective instruction.[11]

Furthermore, issues related to the quality and relevance of e-learning materials can hinder implementation. Mathematics teachers often report that they struggle to find appropriate digital resources that align with their curriculum and teaching goals. This makes it challenging to design engaging and effective e-learning experiences for students. In conclusion, while e-learning has the potential to revolutionize mathematics education in secondary schools, teachers often encounter numerous barriers in its implementation. Addressing these barriers, such as improving technology access, providing robust professional development, and ensuring high-quality e-learning resources, is essential to harness the full potential of digital tools and resources in secondary school mathematics classrooms.[12] By overcoming these challenges, educators can provide students with a more engaging and effective mathematics education that prepares them for success in a technology-driven world.

Communication is a vital component of education, and the transition to online learning has brought about a range of communication problems for students. These challenges can significantly impact the learning experience and student outcomes. First, online learning often leads to a lack of direct interaction with instructors. In traditional classrooms, students can ask questions, seek clarification, and engage in spontaneous discussions. However, in the online environment, there

[11] Jungjoo Kim, Yangyi Kwon, and Daeyeon Cho, "Investigating Factors That Influence Social Presence and Learning Outcomes in Distance Higher Education," *Computers Education* 57, no. 2 (2011): 1512–20, doi:10.1016/j.compedu.2011.02.005.

[12] Xiaoxia Huang and E-Ling Hsiao, "Synchronous and Asynchronous Communication in an Online Environment: Faculty Experiences and Perceptions," *Quarterly Review of Distance Education* 13, no. 1 (2012): 15–30.

may be limited opportunities for real-time communication, making it difficult for students to receive immediate feedback and support.[13] This delay in communication can hinder their understanding of the material and lead to frustration.

The absence of face-to-face communication with peers can lead to a sense of isolation. In traditional settings, students can collaborate, share ideas, and build a sense of community. Online learning, on the other hand, can be a solitary experience, potentially resulting in reduced motivation and engagement. Students may miss the camaraderie and peer support that face-to-face interactions provide.[14]

According to Bovill, & Woolmer, (2018), technical issues pose another significant challenge. Unstable internet connections, software glitches, and platform-related problems can disrupt communication between students and their instructors or peers.[15] These technical hurdles can lead to missed assignments, missed classes, and miscommunication, creating additional stress for students. Students may face challenges in interpreting non-verbal cues and nuances in written communication. In online learning, much of the communication occurs through text-based messages, discussion forums, and emails.[16] This mode of communication can lack the tone, body language, and facial expressions that aid in understanding intent and meaning. Misunderstandings can arise, leading to confusion and potential conflicts.

[13] Mushtaq Hussain et al., "Student Engagement Predictions in an E-Learning System and Their Impact on Student Course Assessment Scores," *Computational Intelligence and Neuroscience* 1, no. 21 (2018): 1–21, doi:10.1155/2018/6347186.

[14] Shahid Farid et al., "Identification and Prioritization of Critical Issues for the Promotion of E-Learning in Pakistan," *Computers in Human Behavior* 51 (October 1, 2015): 161–71, doi:10.1016/j.chb.2015.04.037.

[15] Catherine Bovill and Cherie Woolmer, "How Conceptualisations of Curriculum in Higher Education Influence Student-Staff Co-Creation in and of the Curriculum," *Higher Education* 78, no. 3 (December 26, 2018): 407–22, doi:10.1007/s10734-018-0349-8.

[16] Sara Isabella de Freitas, John Morgan, and David Gibson, "Will Moocs Transform Learning and Teaching in Higher Education? Engagement and Course Retention in Online Learning Provision," *British Journal of Educational Technology* 46, no. 3 (2015): 455–71, doi:10.1111/bjet.12268.

In conclusion, the shift to online learning has introduced several communication problems for students. The lack of direct interaction with instructors, isolation from peers, technical issues, and challenges in interpreting written communication are all obstacles that students need to navigate. Addressing these issues requires careful planning, effective communication tools, and training for educators and students to ensure that online learning is as engaging and effective as possible.

To address the designed objectives a survey research by using rating scale was conducted and collected data was analyzed to diagnose the matter. The analysis revealed following results as perceived by students studying at higher education level.

Table 1 Challenges in Student Communication Encountered in Virtual Learning Environments

Challenges faced by students in virtual learning	**Less**		**Moderate**		**High**	
	N	Percentage	N	Percentage	N	Percentage
Social isolation	45	15.4	197	67.2	51	17.4
Interaction	0	0	179	61.1	114	38.9
Interest	40	13.7	204	69.6	49	16.7
Conceptual learning	6	2.0	194	66.2	93	31.7
Practical knowledge	20	6.8	192	65.5	81	27.6
Assessment problems	60	20.5	166	56.7	67	22.9

Table 1 provides a comprehensive overview of the challenges that students face in terms of communication during their participation in virtual learning environments. The table categorizes these challenges into different aspects, including social isolation, interaction, interest, conceptual learning, practical knowledge, and assessment problems.

In the first aspect, social isolation, 45 students (15.4%) reported experiencing a lower degree of social isolation, while 197 students (67.2%) indicated a moderate level of social isolation, and 51 students (17.4%) faced a high level of social isolation during their virtual learning experiences.

The second aspect, interaction, revealed that none of the students reported a lower level of interaction, while 179 students (61.1%) encountered a moderate level of interaction challenges, and 114 students (38.9%) experienced high levels of interaction challenges.

The table highlights the varying degrees of challenges in these communication-related aspects within virtual learning environments. It indicates that while some students experienced milder difficulties, others faced more pronounced challenges, shedding light on the multifaceted nature of online education's impact on student communication.

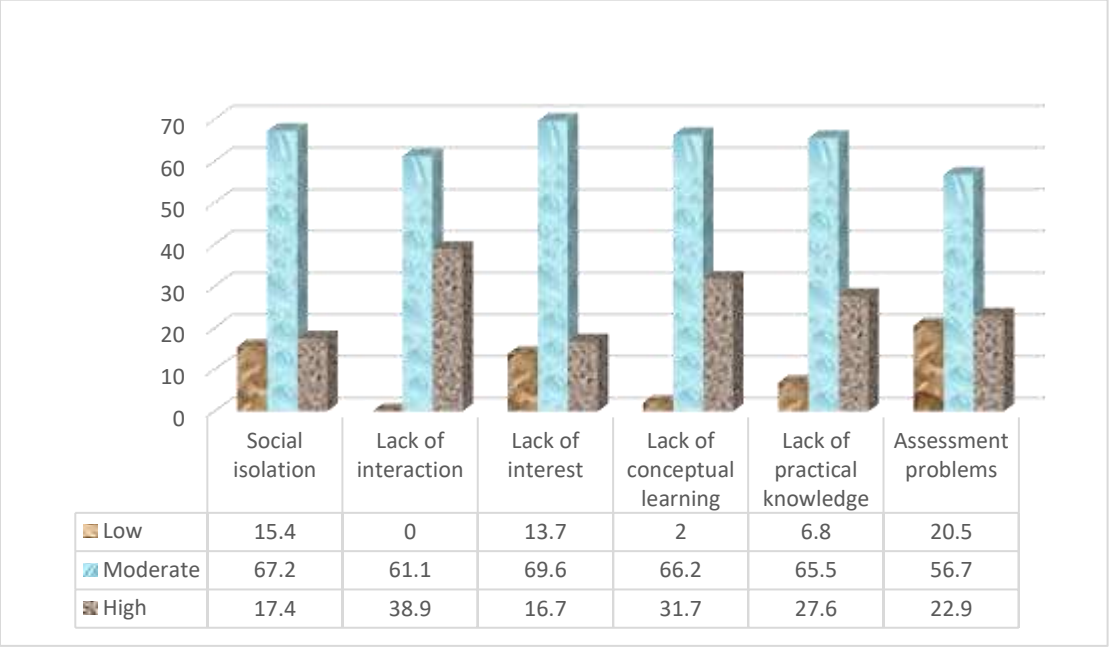


Figure I. Challenges in Student Communication Encountered in Virtual Learning Environments

Table 2 Challenges in Student Communication Encountered in Virtual Learning Environments by Male Students

Challenges faced by students in virtual learning	**Less**		**Moderate**		**High**	
	N	Percentage	N		N	Percentage
Social isolation	32	19.2	111	66.5	24	14.4
Interaction	0	0	108	64.7	59	35.3

Interest	25	15.0	113	67.7	29	17.4
Conceptual learning	3	1.8	117	70.1	47	28.1
Practical knowledge	9	5.4	114	68.3	44	26.3
Assessment problems	45	26.9	102	61.1	20	12.0

Table 2 presents an insightful overview of the challenges faced by male students in virtual learning environments. The challenges are categorized into six key areas, and the table provides data on the frequency of occurrence among the surveyed students, along with the percentage distribution of responses.

One prominent challenge indicated in the table is "Social isolation," which is reported as high by 14.4% of male students. This suggests that a significant portion of male students feels socially disconnected in virtual learning environments. "Interaction" is another notable challenge, with 35.3% of students rating it as high. This highlights the need for enhanced opportunities for peer-to-peer interaction and collaboration in virtual learning settings. "Interest" and "Conceptual learning" challenges are reported as high by 17.4% and 28.1% of students, respectively, indicating that maintaining engagement and comprehending complex concepts can be problematic for a considerable portion of male learners. "Practical knowledge" and "Assessment problems" are also substantial challenges, reported as high by 26.3% and 12.0% of students, respectively, suggesting the need for improvements in delivering practical skills and assessing student performance in virtual learning.

This table underscores the diverse array of challenges that male students encounter in virtual learning environments. These challenges range from social isolation and issues related to interaction and engagement to difficulties in grasping complex concepts and acquiring practical knowledge. Understanding these challenges can inform educators and institutions in tailoring virtual learning experiences to better meet the needs of male students and improve their overall educational outcomes in the digital era.

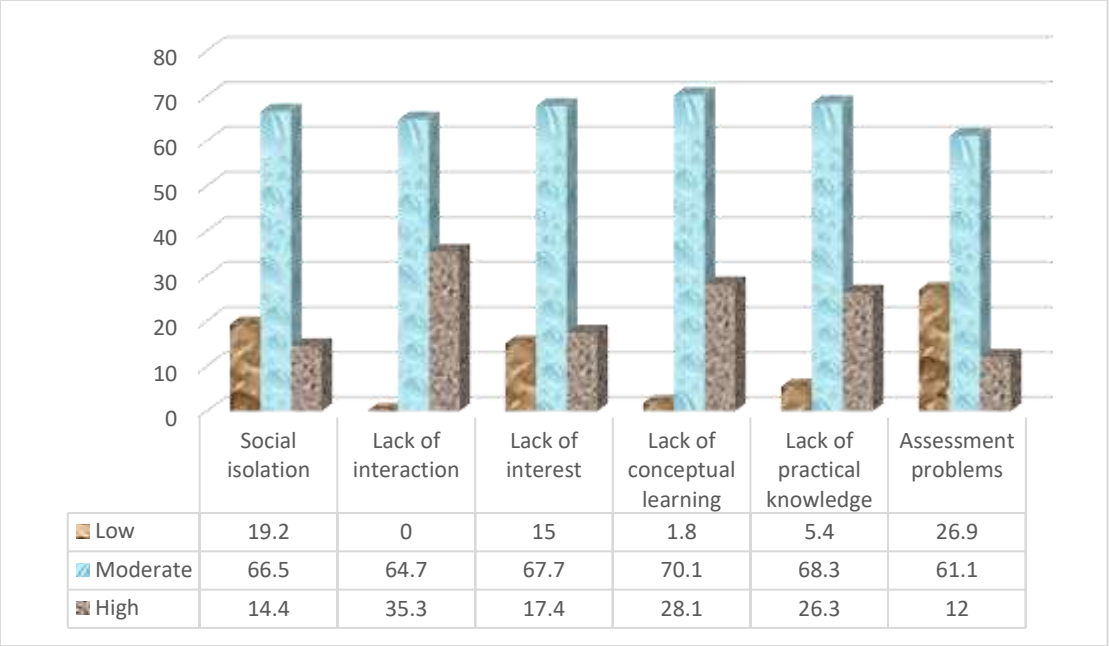


Figure II. Challenges in Student Communication Encountered in Virtual Learning Environments by Male Students

Table 3 Challenges in Student Communication Encountered in Virtual Learning Environments by Female Students

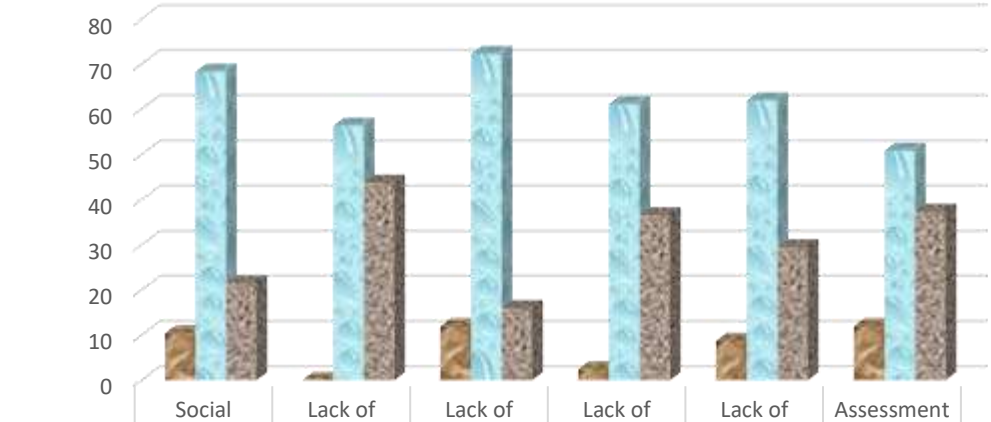
Challenges faced by students in virtual learning	**Less**		**Moderate**		**High**	
	N	Percentage	N		N	Percentage
Social isolation	13	10.3	86	68.3	27	21.4
Interaction	0	0	71	56.3	55	43.7
Interest	15	11.9	91	72.2	20	15.9
Conceptual learning	3	2.4	77	61.1	46	36.5
Practical knowledge	11	8.7	78	61.9	37	29.4
Assessment problems	15	11.9	64	50.8	47	37.3

Table 3 provides a comprehensive overview of the challenges faced by female students in virtual learning environments. The table categorizes these challenges into six key areas and presents data on the frequency of occurrence among the surveyed students, along with the percentage distribution of responses.

One of the most striking observations from this table is the challenge of "Social isolation," with 21.4% of female students rating it as high. This indicates that a significant portion of female learners feels socially isolated in virtual learning environments. "Interaction" is another major

challenge, with 43.7% of students reporting it as high. This emphasizes the importance of promoting opportunities for peer-to-peer interaction and collaboration in online learning settings. "Conceptual learning" is reported as a high challenge by 36.5% of female students, suggesting that grasping complex concepts can be particularly difficult for a substantial portion of female learners. "Practical knowledge" and "Assessment problems" are also substantial challenges, with 29.4% and 37.3% of students, respectively, rating them as high. These findings highlight the need for improvements in delivering practical skills and assessing student performance in virtual learning.

Table 3 underscores the varied challenges that female students face in virtual learning environments. These challenges range from social isolation and issues related to interaction and engagement to difficulties in comprehending complex concepts and acquiring practical knowledge. Understanding these challenges is essential for educators and institutions to tailor virtual learning experiences to better meet the needs of female students, thus enhancing their educational outcomes in the digital era.



	Social isolation	Lack of interaction	Lack of interest	Lack of conceptual learning	Lack of practical knowledge	Assessment problems
Low	10.3	0	11.9	2.4	8.7	11.9
Moderate	68.3	56.3	72.2	61.1	61.9	50.8
High	21.4	43.7	15.9	36.5	29.4	37.3

Figure III. Challenges in Student Communication Encountered in Virtual Learning Environments by Female Students

Table 4. *Challenges in Student Communication Encountered in Virtual Learning Environments by Urban Students*

Challenges faced by students in virtual learning	**Less**		**Moderate**		**High**	
	N	Percentage	N	Percentage	N	Percentage
Social isolation	20	12.0	118	71.1	28	16.9
Interaction	0	0	92	55.4	74	44.6
Interest	21	12.7	118	71.1	27	16.3
Conceptual learning	1	.6	110	66.3	55	33.1
Practical knowledge	10	6.0	109	65.7	47	28.3
Assessment problems	33	19.9	99	59.6	34	20.5

Table 4 presents an overview of the challenges encountered by urban students in virtual learning environments, with a focus on the level of severity of these challenges. The challenges are categorized into six distinct areas, and the table provides data in terms of the number of students and the corresponding percentages who reported facing these challenges to a lesser, moderate, or high degree.

Social isolation appears to be a noteworthy concern, with 71.1% of the students reporting a moderate level of this challenge, while 16.9% find it to be a high-level issue. This highlights the significant impact of virtual learning on students' sense of social connectedness and the need for strategies to mitigate social isolation. Interaction-related challenges are also substantial, affecting 55.4% of students to a moderate extent and 44.6% to a high degree. This indicates that many students struggle with the reduced interpersonal interactions in virtual learning settings, which could potentially affect their engagement and learning outcomes.

Interest and engagement in virtual learning seem to be generally high, with a relatively small percentage of students experiencing challenges in this regard. Conceptual learning, practical knowledge, and assessment problems also feature as significant challenges, with varying degrees of severity.

These findings suggest that addressing the quality of content delivery, practical applications, and assessment methods is important to enhance the overall virtual learning experience for urban students. In short, the table underscores the multifaceted challenges that urban students face in virtual learning environments, with social isolation and interaction difficulties being particularly prominent areas of concern. Addressing these challenges is crucial for ensuring the effectiveness and satisfaction of virtual learning for this demographic.

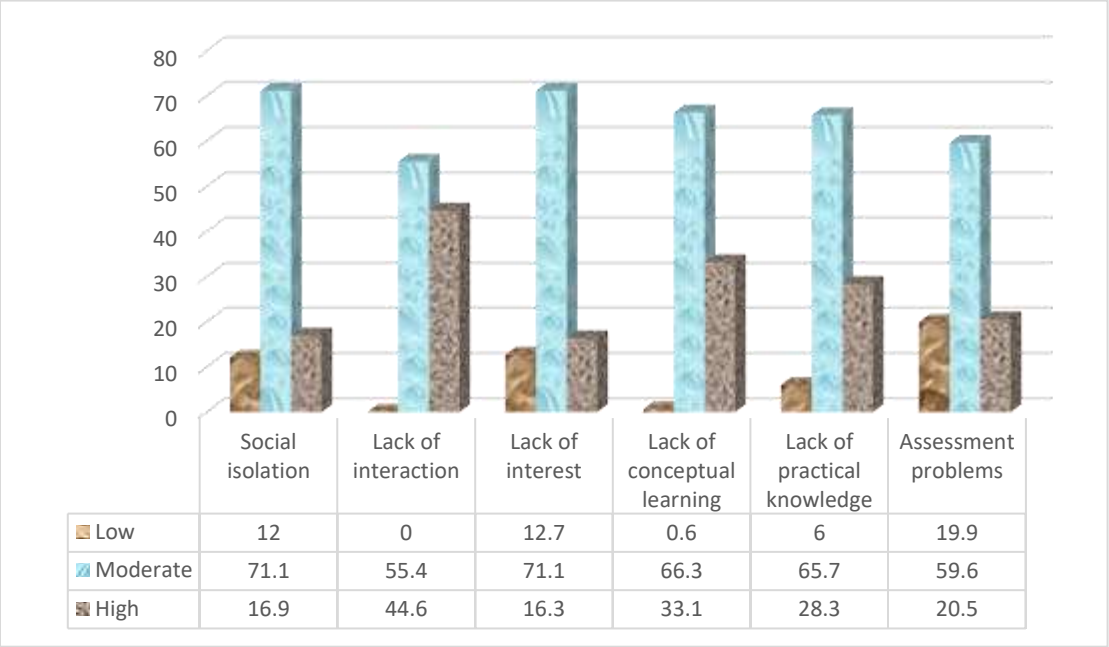


Figure IV. Challenges in Student Communication Encountered in Virtual Learning Environments by Urban Students

Table 5. Challenges in Student Communication Encountered in Virtual Learning Environments by Rural Students

Challenges faced by students in virtual learning	**Less**		**Moderate**		**High**	
	N	Percentage	N	Percentage	N	Percentage
Social isolation	25	19.7	79	62.2	23	18.1
Interaction	1	0.8	86	67.7	40	31.5
Interest	19	15.0	86	67.7	22	17.3
Conceptual learning	5	3.9	84	66.1	38	29.9
Practical knowledge	10	7.9	83	65.4	34	26.8
Assessment problems	27	21.3	67	52.8	33	26.0

Table 5 presents an overview of the challenges faced by rural students in virtual learning environments, with a breakdown of these challenges into three categories: less, moderate, and high severity. The data is presented in terms of the number of students and the corresponding percentages who reported encountering each challenge. Social isolation emerges as a notable concern among rural students in virtual learning, with 62.2% reporting a moderate level of social isolation and 18.1% experiencing it at a high level. This highlights the significant impact of virtual learning on the sense of social connectedness for rural students, emphasizing the need to address this issue to foster a sense of community and support among learners.

Interaction-related challenges are also substantial, affecting 67.7% of students at a moderate level and 31.5% at a high level. This suggests that many rural students face difficulties in engaging with their peers and instructors in the virtual learning environment, underscoring the importance of strategies to promote effective online interactions. While interest and engagement in virtual learning seem generally strong, challenges related to conceptual learning, practical knowledge, and assessment problems also feature prominently, with varying degrees of severity. This indicates the need to enhance the quality of content delivery and assessments to better cater to the specific needs of rural students and improve their overall virtual learning experience.

Table highlights the multifaceted challenges faced by rural students in virtual learning, with social isolation and interaction difficulties being particularly significant areas of concern. Addressing these challenges is crucial for ensuring effective and engaging virtual learning experiences for rural students.

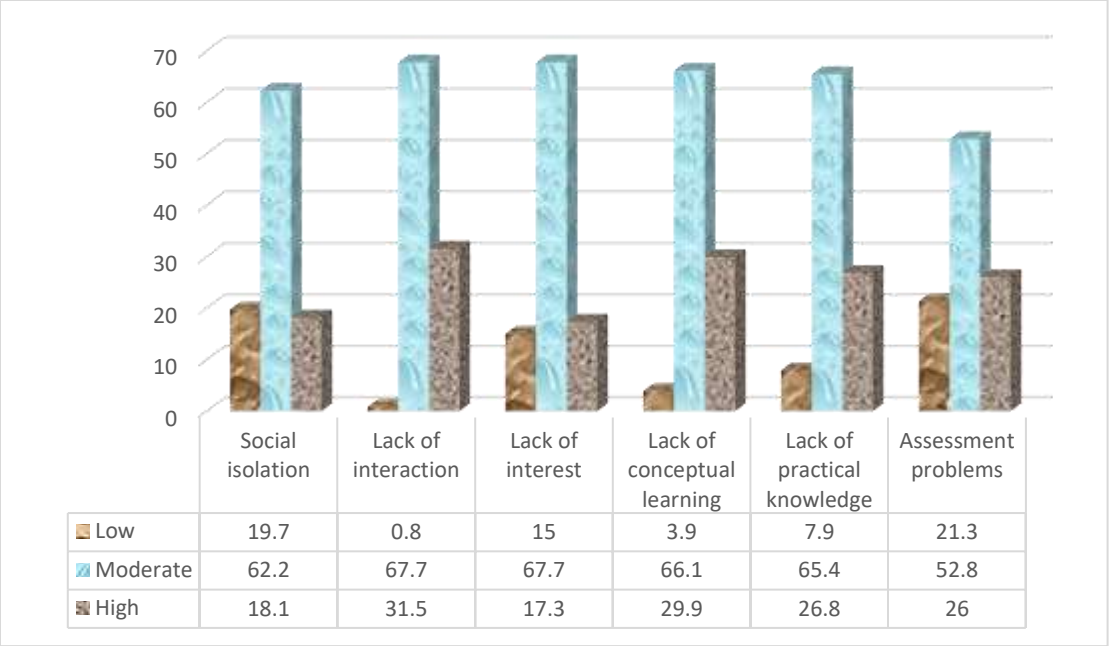


Figure V. Challenges in Student Communication Encountered in Virtual Learning Environments by Rural Students

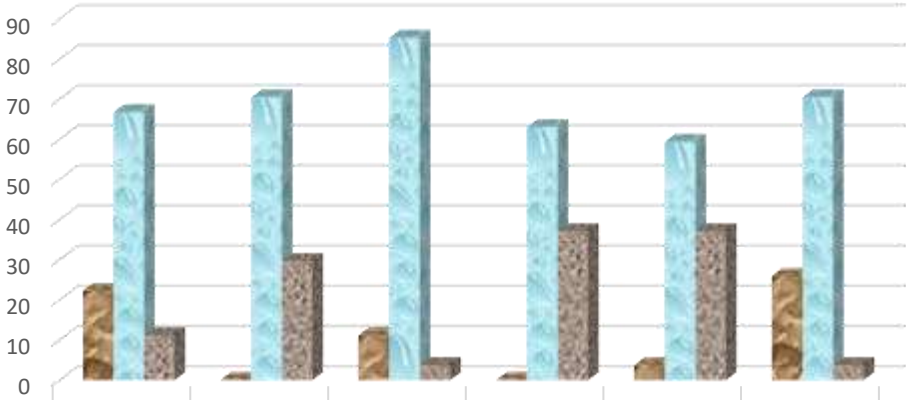
Table 6. Challenges in Student Communication Encountered in Virtual Learning Environments by Students Having Weak IT Skills

Challenges faced by students in virtual learning	**Less**		**Moderate**		**High**	
	N	Percentage	N	Percentage	N	Percentage
Social isolation	6	22.2	18	66.7	3	11.1
Interaction	0	0	19	70.4	8	29.6
Interest	3	11.1	23	85.2	1	3.7
Conceptual learning	0	0	17	63.0	10	37.0
Practical knowledge	1	3.7	16	59.3	10	37.0
Assessment problems	7	25.9	19	70.4	1	3.7

Table 6 provides valuable insights into the challenges faced by students with weak IT skills in virtual learning environments. The table categorizes these challenges into three levels of severity: less, moderate, and high, and presents data in terms of the number of students and the corresponding percentages who reported encountering each challenge. For students with weak IT skills, social isolation appears to be less of a challenge, with 66.7% reporting a moderate level and 11.1% experiencing it at a high level. This suggests that the digital divide might not affect their social connectedness as much as it does other groups, possibly due to a focus on using technology

primarily for educational purposes. However, interaction-related challenges are prominent, with 70.4% of these students experiencing a moderate level and 29.6% facing a high level of difficulty in virtual interactions. This indicates that students with weak IT skills may struggle with the technical aspects of virtual communication, highlighting the need for additional support and training in digital literacy.

While interest and engagement in virtual learning are generally high, challenges related to conceptual learning, practical knowledge, and assessment problems are significant, with varying degrees of severity. This suggests that addressing the digital skills gap among these students is essential to improve their overall learning experience and bridge the divide in conceptual understanding and practical application. Table 6 underscores that students with weak IT skills encounter specific challenges in virtual learning environments, particularly in the realm of interaction. Addressing these challenges and providing appropriate support in digital literacy are crucial to make virtual learning more effective and accessible for this group of students.



	Social isolation	Lack of interaction	Lack of interest	Lack of conceptual learning	Lack of practical knowledge	Assessment problems
Low	22.2	0	11.1	0	3.7	25.9
Moderate	66.7	70.4	85.2	63	59.3	70.4
High	11.1	29.6	3.7	37	37	3.7

Figure VI: Challenges in Student Communication Encountered in Virtual Learning Environments by Students Having Weak IT Skills

Table 7. Challenges in Student Communication Encountered in Virtual Learning Environments by Students Having Normal IT Skills

Challenges faced by students in virtual learning	**Less**		**Moderate**		**High**	
	N	Percentage	N	Percentage	N	Percentage
Social isolation	34	15.0	154	67.8	39	17.2
Interaction	0	0	133	58.6	94	41.4
Interest	31	13.7	154	67.8	42	18.5
Conceptual learning	6	2.6	152	67.0	69	30.4
Practical knowledge	18	7.9	157	69.2	52	22.9
Assessment problems	44	19.4	131	57.7	52	22.9

Table 7 offers a comprehensive overview of the challenges faced by students with normal IT skills in virtual learning environments. The table categorizes these challenges into three levels of severity: less, moderate, and high, presenting data in terms of the number of students and the corresponding percentages who reported encountering each challenge.

Among students with normal IT skills, social isolation is reported as a moderate challenge by 67.8%, while 17.2% experience it at a high level. This indicates that, even with average IT proficiency, students may still face difficulties in maintaining social connections in virtual learning environments. Addressing social isolation should remain a priority to enhance the overall learning experience for this group. Interaction-related challenges are particularly significant, with 58.6% of these students reporting a moderate level and 41.4% facing a high level of difficulty. This highlights that even students with normal IT skills may encounter obstacles in effective virtual communication. Improving interaction tools and providing guidance on how to use them effectively can enhance the learning experience.

While interest and engagement in virtual learning appear generally strong, challenges related to conceptual learning, practical knowledge, and assessment problems are notable, with varying degrees of severity. These findings emphasize the need for optimizing instructional content,

practical applications, and assessment methodologies to cater to the specific needs of students with normal IT skills and improve their overall learning experience.

Table 7 highlights that students with normal IT skills encounter a range of challenges in virtual learning environments, with interaction difficulties and concerns about conceptual learning and practical knowledge being significant areas of concern. Addressing these challenges is essential to make virtual learning more effective and engaging for this group of students.

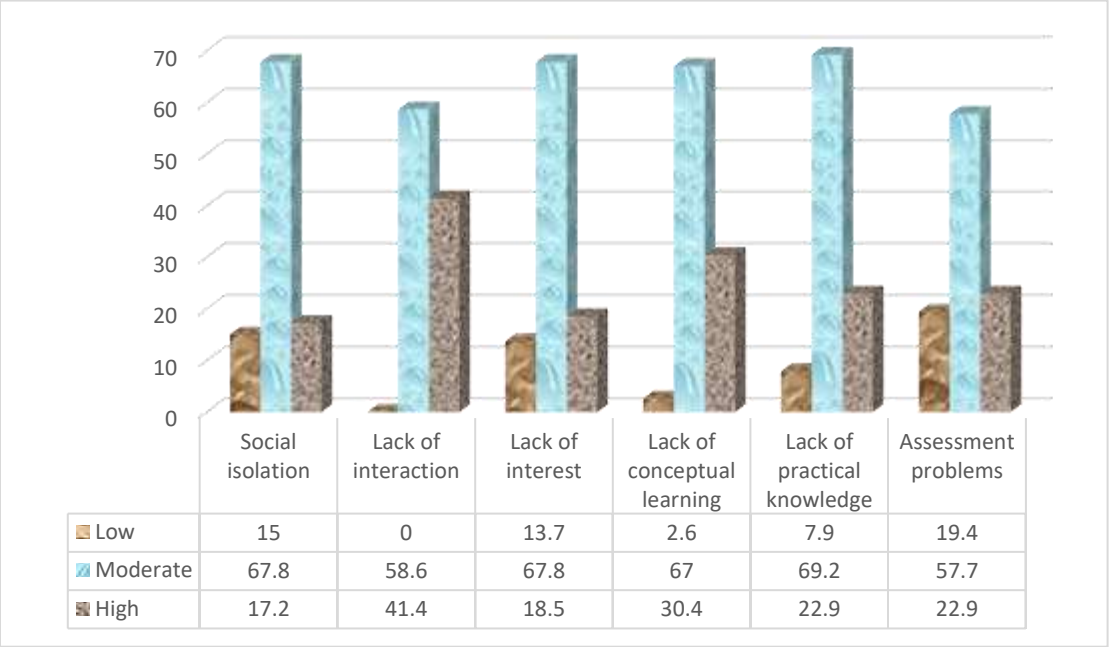


Figure VII. Challenges in Student Communication Encountered in Virtual Learning Environments by Students Having Normal IT Skills

Table 8. Challenges in Student Communication Encountered in Virtual Learning Environments by Students Having Good IT Skills

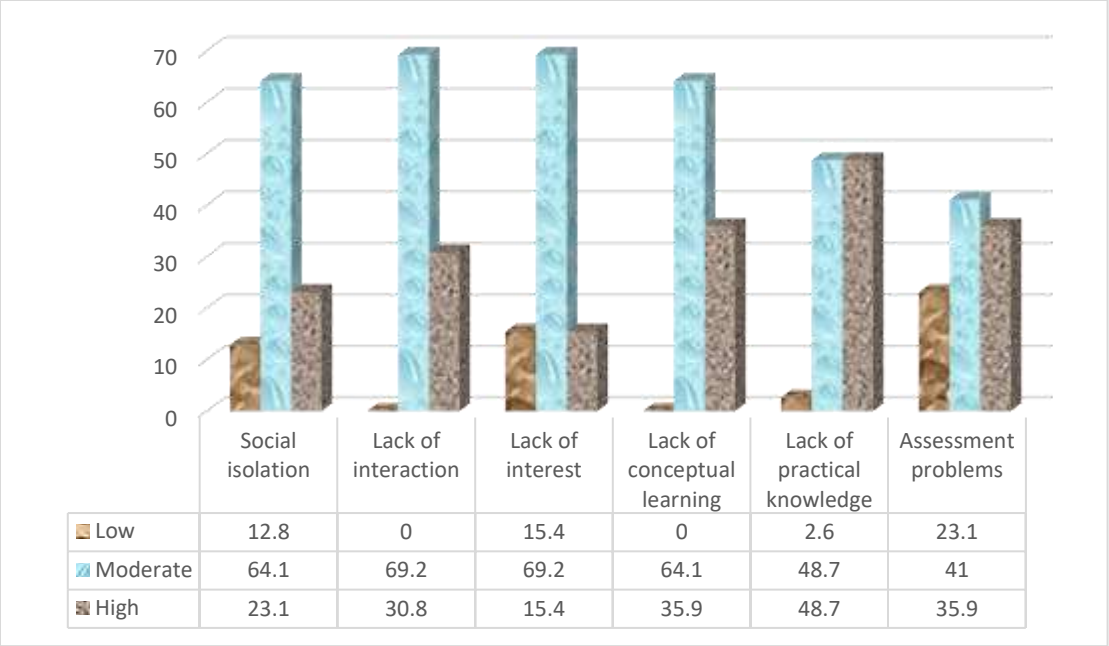
Challenges faced by students in virtual learning	**Less**		**Moderate**		**High**	
	N	Percentage	N	Percentage	N	Percentage
Social isolation	5	12.8	25	64.1	9	23.1
Interaction	0	0	27	69.2	12	30.8
Interest	6	15.4	27	69.2	6	15.4
Conceptual learning	0	0	25	64.1	14	35.9
Practical knowledge	1	2.6	19	48.7	19	48.7
Assessment problems	9	23.1	16	41.0	14	35.9

Table 8 provides an overview of the challenges encountered by students with good IT skills in virtual learning environments. The table categorizes these challenges into three levels of severity: less, moderate, and high, presenting data in terms of the number of students and the corresponding percentages who reported encountering each challenge.

Among students with good IT skills, social isolation is reported as a moderate challenge by 64.1%, and 23.1% experience it at a high level. This suggests that even students with strong IT skills may face some degree of social isolation in virtual learning environments, though to a lesser extent than those with weaker IT skills. Addressing social isolation remains a concern even for more technologically proficient students. Interaction-related challenges are significant, with 69.2% of these students reporting a moderate level and 30.8% facing a high level of difficulty. This indicates that even students with good IT skills may struggle with effective virtual communication, highlighting the need for improved virtual interaction tools and guidance on their use.

Challenges related to conceptual learning, practical knowledge, and assessment problems are notable, with varying degrees of severity. These findings emphasize the importance of optimizing instructional content, practical applications, and assessment methodologies to cater to the specific needs of students with good IT skills and improve their overall learning experience.

In summary, Table 8 highlights that even students with good IT skills encounter various challenges in virtual learning environments, particularly in the areas of interaction and concerns about conceptual learning and practical knowledge. Addressing these challenges is essential to make virtual learning more effective and engaging for this group of students.



	Social isolation	Lack of interaction	Lack of interest	Lack of conceptual learning	Lack of practical knowledge	Assessment problems
Low	12.8	0	15.4	0	2.6	23.1
Moderate	64.1	69.2	69.2	64.1	48.7	41
High	23.1	30.8	15.4	35.9	48.7	35.9

Figure VIII. Challenges in Student Communication Encountered in Virtual Learning Environments by Students Having Good IT Skills

1. Conclusion:

Here are the main findings and conclusions, rephrased for clarity:

1. The majority of students faced moderate-level challenges in social isolation, lack of interaction, lack of interest, conceptual learning difficulties, practical knowledge gaps, and assessment problems as communication issues in virtual learning.

2. Both male and female students encountered moderate-level challenges in social isolation, interaction issues, a lack of interest, conceptual learning difficulties, practical knowledge gaps, and assessment problems in virtual learning. This suggests that these challenges were prevalent across gender lines.

3. A significant proportion of urban students encountered moderate-level challenges related to social isolation, interaction difficulties, a lack of interest, conceptual learning issues, practical knowledge gaps, and assessment problems in virtual learning. In contrast, rural students faced similar moderate-level communication challenges in their virtual learning experiences.

4. Students with weak IT skills reported moderate-level challenges with social isolation, interaction difficulties, a lack of interest, conceptual learning issues, practical knowledge gaps, and assessment problems. Students with average IT skills faced comparable moderate-level communication challenges. Additionally, students with good IT skills also encountered these moderate-level challenges, indicating that technical proficiency did not eliminate these communication difficulties in virtual learning.

3. Recommendations:

It is recommended that:

1. Adequate and mandatory training programs should be implemented for both educators and students, focusing on the effective utilization of computer technology in the teaching and learning processes.
2. It is imperative to devise strategies that aim to reduce communication challenges during the delivery of online classes.
3. Policymakers ought to consider a blended approach, integrating both in-person and virtual classes, to create a hybrid learning program that provides a balanced educational experience.

References

Allo, Markus Deli Girik. “Is the Online Learning Good in the Midst of Covid-19 Pandemic? The Case of EFL Learners .” *Jurnal Sinestesia* 10, no. 1 (April 2020): 1–10.

Bovill, Catherine, and Cherie Woolmer. “How Conceptualisations of Curriculum in Higher Education Influence Student-Staff Co-Creation in and of the Curriculum.” *Higher Education* 78, no. 3 (December 26, 2018): 407–22. doi:10.1007/s10734-018-0349-8.

de Freitas, Sara Isabella, John Morgan, and David Gibson. “Will Moocs Transform Learning and Teaching in Higher Education? Engagement and Course Retention in Online Learning Provision.” *British Journal of Educational Technology* 46, no. 3 (2015): 455–71. doi:10.1111/bjet.12268.

Farid, Shahid, Rodina Ahmad, Iftikhar Azim Niaz, Muhammad Arif, Shahaboddin Shamshirband, and Muhammad Daud Khattak. "Identification and Prioritization of Critical Issues for the Promotion of E-Learning in Pakistan." *Computers in Human Behavior* 51 (October 1, 2015): 161–71. doi:10.1016/j.chb.2015.04.037.

Huang, Xiaoxia, and E-Ling Hsiao. "Synchronous and Asynchronous Communication in an Online Environment: Faculty Experiences and Perceptions." *Quarterly Review of Distance Education* 13, no. 1 (2012): 15–30.

Hussain, Mushtaq, Wenhao Zhu, Wu Zhang, and Syed Muhammad Abidi. "Student Engagement Predictions in an E-Learning System and Their Impact on Student Course Assessment Scores." *Computational Intelligence and Neuroscience* 1, no. 21 (2018): 1–21. doi:10.1155/2018/6347186.

Kim, Jungjoo, Yangyi Kwon, and Daeyeon Cho. "Investigating Factors That Influence Social Presence and Learning Outcomes in Distance Higher Education." *Computers Education* 57, no. 2 (2011): 1512–20. doi:10.1016/j.compedu.2011.02.005.

Levin, Tamar, and Rivka Wadmany. "Listening to Students' Voices on Learning with Information Technologies in a Rich Technology-Based Classroom." *Journal of Educational Computing Research* 34, no. 3 (2006): 281–317. doi:10.2190/ct6q-0wdg-cddp-u6tj.

Liu, Shih-Hwa, and Gwo-Guang Lee. "Knowledge Sharing Behavior in E-Learning Materials Developing Team." *Procedia - Social and Behavioral Sciences* 64 (2012): 681–90. doi:10.1016/j.sbspro.2012.11.080.

Mailizar, Mailizar, Abdulsalam Almanthari, Suci Maulina, and Sandra Bruce. "Secondary School Mathematics Teachers' Views on e-Learning Implementation Barriers during the COVID-19 Pandemic: The Case of Indonesia." *Eurasia Journal of Mathematics, Science and Technology Education* 16, no. 7 (2020). doi:10.29333/ejmste/8240.

Pace, Christi, Stacie Pettit, and Kim Barker. "Best Practices in Middle Level Quaranteaching: Strategies, Tips and Resources amidst COVID-19." *Becoming: Journal of the Georgia Middle School Association* 31, no. 1 (2020): 2–13. doi:10.20429/becoming.2020.310102.

Raju, V, and P.S Phung. "Understanding Flamboyancy of Globalization through Higher Educational Economics: Limkokwing Integrated Model on Economics (LIME)." *International Journal of Global Business* 11, no. 2 (2018): 40–50.

Rasmitadila, Rasmitadila, Rusi Rusmiati Aliyyah, Reza Rachmadtullah, Achmad Samsudin, Ernawulan Syaodih, Muhammad Nurtanto, and Anna Riana Tambunan. "The Perceptions of Primary School Teachers of Online Learning during the COVID-19 Pandemic Period: A Case Study in Indonesia." *Journal of Ethnic and Cultural Studies*, 2020, 90–109. doi:10.29333/ejecs/388.

Shah, Mahsood, and Ming Cheng. "Exploring Factors Impacting Student Engagement in Open Access Courses." *Open Learning: The Journal of Open, Distance and e-Learning* 34, no. 2 (2018): 187–202. doi:10.1080/02680513.2018.1508337.

Toquero, Cathy Mae. "Challenges and Opportunities for Higher Education amid the COVID-19 Pandemic: The Philippine Context." *Pedagogical Research* 5, no. 4 (2020). doi:10.29333/pr/7947.

Zhong, Bao-Liang, Wei Luo, Hai-Mei Li, Qian-Qian Zhang, Xiao-Ge Liu, Wen-Tian Li, and Yi Li. "Knowledge, Attitudes, and Practices towards Covid-19 among Chinese Residents during the Rapid Rise Period of the Covid-19 Outbreak: A Quick Online Cross-Sectional Survey." *International Journal of Biological Sciences* 16, no. 10 (2020): 1745–52. doi:10.7150/ijbs.45221.