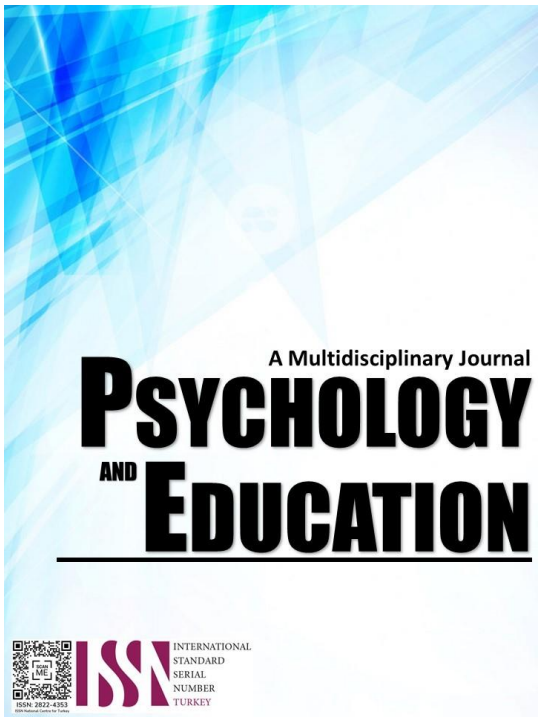
PERSPECTIVE OF JUNIOR HIGH SCHOOL STUDENTS ON LEARNING MATHEMATICS: LEARNING AT THE DISTANCE DUE TO COVID-19



PSYCHOLOGY AND EDUCATION: A MULTIDISCIPLINARY JOURNAL

2022
Volume: 6
Pages: 1260-1268
Document ID: 2022PEMJ422
DOI: 10.5281/zenodo.7444465
Manuscript Accepted: 2022-13-12

Psych Educ, 2022, **6**: 1260-1268, Document ID: PEMJ422, doi: 10.5281/zenodo.7444465, ISSN 2822-4353

Research Article

Perspective of Junior High School Students on Learning Mathematics: Learning at the Distance Due to COVID-19

Mariamae Egtob*, Vincent Sawate, Ronnie Castillo, Ailyn Pacaoncis, Chona Ann Ricafort, Jeffry Saro
For affiliations and correspondence, see the last page.

Abstract

The COVID-19 pandemic had brought several challenges and difficulties to the educational sector, particularly in the implementation of distance learning methods. This paradigm shift in learning was felt globally, not just in the Philippines. The purpose of this study was to illustrate and determine the perspective of the Grade 10 junior high school students about their understanding and learning experiences in mathematics during the COVID-19 crisis. As well, this study would like to investigate the students' preferences to either continue the distance learning modality or bring back the substantial presence of traditional face-to-face classes. More so, this research project employed a quantitative approach with a descriptive research design utilizing the developed and validated survey questionnaire. The sampling population consisted of 150 junior high school students from the private and public schools in Agusan del Sur and a few parts of Butuan City, and it was randomly chosen based on the standard criteria created by the researchers. As a result, the descriptive statistical treatment was used to obtain the mean value and standard deviation of scores, as well as descriptive and qualitative interpretations of the items. Based on the findings, the overall weighted mean value is (m=3.92) with a standard deviation of scores of 0.95, indicating a descriptive interpretation of "agree" with a qualitative interpretation of "the extent of the effect is high," which means to say that the respondents of the study are greatly agreed on the questions made by the researchers on their perceptions of learning math at distance learning due to COVID-19. The preference of the students is to have face-to-face classes, which had 142 responses with an equivalent percentage of 94.67%. This indicates that the students preferred to have in-person learning over distance learning. For future research, it would be better to conduct studies that focus on the learning styles to better understand them, as well as the detailed viewpoints of the participants, by gathering information through a qualitative approach. This will also explore how teaching techniques and methods could impact students' impressions of distance and in-person classes.

Keywords: *modular learning, traditional interaction, mathematics, online learning, COVID-19*

Introduction

Modern society has been significantly affected by the COVID-19 outbreak, which has had consequences in practically every area of human endeavor that have never been seen. Travel restrictions, the worldwide economic downturn, bigotry, false information, controversies, and most importantly the closure of schools are just a few of the factors that have caused significant disruptions (Viner et al., 2020; Barua, 2020; Enitan et al., 2020).

The World Health Organization (WHO) proclaimed COVID-19 a global emergency on January 30, 2020, and a global pandemic on March 11, 2020. This virus spreads quickly. The education industry has experienced similar significant shifts as a result of the global adoption of COVID-19 in social interaction and organizational structure. Many countries have put in place stringent social segregation measures to stop the virus from spreading in dense social networks like schools and colleges. As a result, on March 12, 2020, 46 countries declared the shutdown of schools, and 26 of those nations completely closed all schools globally (Weeden & Cornwall, 2020; Huang et al., 2020).

The impact on each area has started to worsen since COVID initially entered the Philippines, particularly in the education sector. Around the world, COVID-19 has had a significant impact on students, teachers, and educational associations. All education sectors, including schools, universities, and colleges worldwide, have been ordered to shut down their websites in order to decrease the amount of social interaction as a result of the pandemic (Toquero, 2020). Nearly everyone will feel uneasy when considering various ideas that claim that the risk of spreading COVID-19 is higher for people who connect socially without keeping a distance. However, as no one is certain of the precise date at which this pandemic will end, educational institutions all over the world are deciding to effectively utilize specialized resources to produce online learning materials for students across all subject areas. Many rules have been altered to accommodate the circumstances of a pandemic, which limits everyone's ability to engage in activities outside the home (Kaur, 2020; Saro et al., 2022).

The idea of distance learning is not uncommon; it was first introduced in the 1990s and has since earned acceptance from important international organizations like UNESCO and the World Bank as well as

numerous national governments (Perraton, 2000; Brende, 2015). Along with this mandated transformation, the introduction of technology has caused a larger paradigm shift in the educational field. Even though O'Brien (2020) notes that "the adoption of distance learning comes as organizers and associations around the world adapt to rules prohibiting large gatherings," Noonoo (2020) points out that some schools lack the controls to deal with the pandemic, while others are better prepared and understand the need for alternative means of delivering education. Internet-based distant learning is something that schools must adopt, especially when it becomes imperative to educate students wherever they are. Because education is the key to achieving global development, it should be given the highest priority (Brende, 2015; Perienen, 2020).

With some educational foundations that are primarily focused on the exchange of instructive content with the world of computers and not expressly on educational approaches and web-based delivery, the abrupt change in online learning is changing to classic dexterity dimensions. A further serious problem with online learning is improper teacher communication. In addition, the content of online courses is frequently double-checked by email with important course teachers, which takes time. For students who are merely content students, the virtual class cannot be deemed necessary. The primary element that online learning lacks is traditional homeroom teacher outreach. In this way, the constant exchange of ideas, information, and data is made possible by comprehension, which only carefully converses with their peers and never directly observes individual students. The primary aspect of online learning that is absent is traditional homeroom teacher outreach. The frequent interchange of ideas, information, and data is largely absent in the area of advanced learning since comprehension only attentively observes their peers and seldom speaks to individual students (Britt, 2006; Wu, 2020; Zhong, 2020).

Even in normal conditions, mathematics is typically seen as difficult (Fritz, Haase, & Rasanen, 2019). During earlier pandemics, a few experiments on distant learning were done. Apparently, a lot of these research were just not particularly focused on mathematics (Astri, 2017). However, in this epidemiological circumstance, teachers are by themselves with these technologies and students are far away. This contrasts with the numerous research that have focused on employing technology as a mediator in mathematics instruction. For instance, Juliane et al. (2017) researched e-learning implementation challenges at Saudi Arabian universities while examining digital teaching and learning for digital natives. Since mathematics has a unique nature in contrast to other disciplines, it is crucial to comprehend how students see the experience of distant learning in this field, including using platforms, Microsoft Teams, and other applications. Although the technology used as platforms for distant learning was helpful for professors and students to share ideas and conversations, it was thought that these were insufficient for teaching mathematics as effectively as traditional face-to-face education. When teaching many subjects, for instance, the teacher and students must engage in discussions, make presentations, and elaborate on the learning objectives. This is not the case when teaching mathematics, where the teacher must also write words and symbols on the board to communicate with the students in addition to leading discussions. Distance learning makes this challenging (Cassibba et al., 2020; Astri, 2017).

Researchers had been focusing on the knowledge needed to integrate distance learning during the COVID-19 crisis at the time this article was written. For instance, Perienen (2020) researched the factors that influence the use of technology by mathematics teachers while focusing on teachers and discovered that just a significant portion of them did so. Nevertheless, a sample of UAE university students expressed a desire to continue their online education beyond COVID-19 in the survey by Almuraqab (2020), which focused on the views of all university students. The findings of Almuraqab's (2020) study will have an impact on those who make decisions on higher education in the UAE. In relation to and to emphasize the importance of mathematics investigation for students during pandemics through online learning and modular learning experiences.

All countries, particularly the Philippines, are quite uncomfortable with the current situation as a result of the COVID-19 pandemic. The findings of the present study will therefore contribute to the knowledge of the integration of e-learning and modular education in the context of developing countries at the junior high school level during the COVID-19 pandemic. Additionally, this study contributes more knowledge about distant learning for better and more effective education from the perspective of the students. As a result, in order to add to the body of knowledge, this study considers the viewpoints of junior high school students in a sample of randomly chosen private and public institutions.

The purpose was to illustrate and determine the

perspective of the junior high school students about their understanding and learning experiences in mathematics during the crisis brought on by COVID-19. As well, this study would like to attest and investigate the students' preferences to either continue the distance learning modality or bring back the substantial presence of traditional face-to-face classes. As a result, the study's findings will assist decision-makers in understanding what students think about their learning experiences in having a distant learning education to achieve the premise of mathematics learning. This study sought and administered answers to the following questions, which are significantly related to the given objectives of the study:

1. What is the perspective of the selected junior high school students towards their learning experience in mathematics through the distance learning modality?
2. After the crisis, do junior high school students prefer to continue learning mathematics through distance education via e-learning and modularity or through traditional face-to-face instruction?

Methodology

The purpose of this study was to determine and investigate junior high school students' perspectives on their mathematics learning experience through distance learning. Wherein the study employed or underwent the quantitative research approach, which has a descriptive research design to measure the perceptions of the respondents. Furthermore, quantitative research methods are widely regarded as capable of producing and inputting reliable, valid, and highly generalizable study results (Fraenkel et al., 2011; Bloomfield & Fisher, 2019). Based on previous research, this design is very easy to gather and explore the data for the assessment and is one of the most used quantitative tools that many researchers could use. The data was collected using a random sampling method and on a voluntary basis through physical interaction, all while adhering to safety precautions to prevent the spread of the virus. Thus, the collection of the data was properly managed by the researchers throughout the selected private and public institutions.

Participants of the Study

The study's participants came from private and public schools in Agusan del Sur and parts of Butuan City, with a sample size of 150 junior high school students chosen at random from Grade 10. The basis for choosing the respondents was based on criteria initiated and proclaimed by the researchers to equally select the respondents to the study. To understand more about the set-up of selecting the participants of this present study, table 1 shows the proper measurement or demographics of the chosen private and public schools by utilizing the frequency and percentage wherein the researchers used Microsoft Excel to attain the results. The participants were almost evenly divided between private and public schools, with the private accounting for 40.67% and the public accounting for 59.33% of the total population of participants. For the distribution of the gender of the respondents, the same process of measurements was taken, and males got (n = 53) with 35.33%, while female participants had (n = 97) with 64.67%, which means there is a big difference between the participants from the males to the females who responded to the survey.

Table 1. The Demographic of Participants of the Study

Participants	*Frequency*	*Percentage (%)*
Grade 10 Level		
Private School	61	40.67
Public School	89	59.33
Participants Gender		
Male	53	35.33
Female	97	64.67
Total	150	100

Research Instrument of the Study

The survey questionnaire was designed and developed based on a thorough review of the relevant literature and studies; thus, it incorporates the researcher's own experiences, as they have already encountered several challenges and issues in the context of education, despite the pandemic's crises. The proponents of the study greatly developed the initial draft of the questionnaire by following several phases or stages before it was finalized and distributed to the participants, who are junior high school students who are already in Grade 10. The first stage involves the researchers developing a set of goals to build questions that are significantly relevant to the study's main objectives. This stage focuses on the observations of

the participants' experiences in learning mathematics through distance education due to COVID-19. In continuation of the stage's formulation, several revisions were made in creating the researcher questionnaire based on the comments and suggestions of the validators, who could provide their insights on the survey questionnaire created by the researchers. Yet, after the revision process, the researchers got approval to proceed with the assessment. To emphasize, the validation was carried out with the researchers' colleagues who have a specialization in mathematics education and could explicitly check the questionnaire based on the significance and relevance of the assessment procedure items. It has undergone statistical measures for the reliability, usefulness, and effectiveness of the questionnaire, and it has been discovered that the results obtained with 0.95 have a good and convenient result for the reliability of the questionnaire (Gay et al., 2012; Statistics Solutions, 2022).

Data Gathering Procedure and Ethical Consideration

The survey questionnaire was well-designed and physically distributed by the researchers to random grade 10 junior high school students in Agusan del Sur and other parts of Butuan City for students enrolled in private schools. This survey was provided on the same day that the researchers conducted the assessment and received the response or the given questionnaire, because the survey will take only 8 to 15 minutes to complete because the content or questions are simple to comprehend and understand. To emphasize the procedure, there is no payment involved in the process of conducting the survey; participation was voluntary on the part of the students. Furthermore, because the students involved in the study are not yet required to include their names and maintain their privacy, and the study is only interested in their experiences and perceptions of learning mathematics during the pandemic, there is no need to reveal the students' names. Additionally, the researchers of the study always emphasize and inculcate the idea that the answers or responses made by the respondents would be only used for educational purposes and that nothing else would be involved in it. Lastly, the research project was conducted with the highest ethical standards for the benefit of the proponents and the involved participants. The researcher's viewpoint is to come up with a good concept and great ideas for the good results of the study, where the authors of the study provide or have some responsibilities to make the study good, and in order to avoid any plagiarism, yet for the researchers to utilize the results and findings of the previous related studies, the authors need to properly cite and honor the rights of the authors of the study to avoid any conflict. Throughout the process, the researchers would also remove the data that they had collected from their end after they had finalized and obtained the correct study results that fit the main purpose and objectives of the current study.

Results and Discussion

The findings of the study have been calculated and coded based on the data gathered by the proponents. The study was illustrated based on the perspective of the junior high school students about their understanding and learning experiences in mathematics during the COVID-19 crisis brought on by COVID-19. As well, this study would like to determine and investigate the students' preferences to either continue the distance learning modality or bring back the substantial presence of traditional face-to-face classes. The study's findings will assist decision-makers in understanding what students think about their learning experiences in having a distant learning education to achieve the premise of mathematics learning.

Table 2. *The Junior High Students' Perceptions of Learning Mathematics Amid the Distance Education*

Items	*Statements*	*Mean*	*SD*	*Descriptive Interpretations*	*Qualitative Interpretation*	*Rank*
1	I have a lot of say over how I spend my time at school undertaking, answering all the learning modules and searching online for the best learning resources to get the necessary answers based on the activity, such as the mathematics subject.	3.48	0.85	Agree	The extent of the effect is high	10
2	As a student, this distance learning mode allows you to perform and deliver tasks at any time of day or night.	3.72	0.88	Agree	The extent of the effect is high	9
3	I have missed the interaction and cooperation with my classmates at school. Also, the presence of our teachers, particularly in math, was very significant. I cannot focus on learning mathematics due to the inconvenience caused by my family and the noise from our neighbors.	4.75	0.95	Strongly Agree	The extent of the effect is very high	5

4	I have a problem answering the modules and worksheets due to a connection issue, which is relevantly important to the activity since most of the learning tasks in mathematics should have the presence of tutorials on YouTube or any other social media platforms.	4.15	0.82	Agree	The extent of the effect is high	6
5	Due to the multiple tasks, I do not have enough time to complete all the required tasks in mathematics, which makes me constantly nervous and anxious.	3.90	0.91	Agree	The extent of the effect is high	7
6	Online learning is very effective since I can participate and exchange ideas with my teacher and classmates during the discussions on mathematics online more than before.	2.37	1.06	Disagree	The extent of the effect is low	15
7	The focus was more on the basic skills of mathematics than the practical applications or any learning resources in math.	3.15	1.27	Neutral	The extent of the effect is uncertain or neutral	13
8	As a student who has encountered the crisis, I feel satisfied with the distance learning experience.	3.25	1.01	Neutral	The extent of the effect is uncertain or neutral	12
9	By utilizing advanced technological equipment, the teacher employs more diverse methods and techniques of teaching mathematics than ever before.	3.87	0.89	Agree	The extent of the effect is high	8
10	As a student, I conclude that distance learning education provided a difficult understanding when it comes to learning math.	4.87	0.90	Strongly Agree	The extent of the effect is very high	4
11	I must concentrate on understanding mathematics, particularly the formula, in order to obtain the correct solutions, rather than memorizing during my preparation for math exams or any type of assessment or more than a regular exam.	4.90	0.92	Strongly Agree	The extent of the effect is very high	3
12	I was tired of trying to understand the module provided by the math teacher.	3.10	1.02	Neutral	The extent of the effect is uncertain or neutral	14
13	I insist that on the recording of the attendance in mathematics class, it should be highlighted, yet not focus only on the screen by the teachers since it needs to clarify the involvement of the students as well.	3.42	0.84	Agree	The extent of the effect is high	11
14	As a student who experiences modular distance learning, I could say it is very difficult since I am literally confused if my modules are properly received by my teacher, who is also quite curious about my attendance if we are not feasible in the classroom.	4.95	0.96	Strongly Agree	The extent of the effect is very high	2
15	My own perspective on distance learning is that it is something good because we are unable to go outside and interact with people, so there are fewer cases of virus spread; however, the learning of the students is not as it was before because while learning at school, there is the presence of teachers to guide the learners; however, having the education at home would burden the students because no one can help them answer the module nor ask for help.	4.97	0.98	Strongly Agree	The extent of the effect is very high	1
Total	Weighted Mean	3.92	0.95	Agree	The extent of the effect is high	7.5

Legend: SD; Standard Deviation; Scale and Adjectival Rating; 1.00 – 1.79, Strongly Disagree; 1.80 – 2.59, Disagree; 2.60 – 3.39, Neutral; 3.40 – 4.19, Agree; 4.20 – 5.00, Strongly Agree

Based on the findings on the students' perspective of learning mathematics amid distance learning education that have been shown in Table 2, the overall weighted mean value is (m = 3.92) with a standard deviation of scores of 0.95, indicating a descriptive interpretation of "agree" with a qualitative interpretation of "the extent of the effect is high," which means to say that the respondents of the study are greatly agreed on the questions made by the researchers on their perceptions of learning math at distance learning due to COVID-19. On the result, the Grade 10 junior high school students' perceptions were positive for the eleven (11) items, and these items had the response of "agree and strongly agree," whereas the four (4) items were negatively impacted by the respondents, which might be due to their experiences, as concluded by their negative responses on the assessment.

Furthermore, these are the detailed items that got a response of "strongly agree" based on the responses of the participants, which are the students in Grade 10 of private and public schools in Agusan del Sur and parts of Butuan City. For the statement of "My own perspective on distance learning is that it is something good because we are unable to go outside and interact with people, so there are fewer cases of virus spread; however, the learning of the students is not as it was before because while learning at school, there is the presence of teachers to guide the learners; however, having the education at home would burden the students because no one can help them answer the module nor ask for help," this item had the qualitative interpretation of "the extent of the effect is very high," with a (m = 4.97) and a standard deviation of 0.98. Thus, this means that the students are not quite sure about the distance education because of the burden or the challenges they encountered at home, or it might be that they cannot focus on learning math. The statement, "As a student who experiences modular distance learning, I could say it is very difficult since I

am literally confused if my modules are properly received by my teacher, who is also quite curious about my attendance if we are not feasible in the classroom," had a mean value of 4.95 and (SD of 0.96), with a measurement rank level of 2 out of the 15 items in the survey questionnaire. This item, "I must concentrate on understanding mathematics, particularly the formula, in order to obtain the correct solutions, rather than memorizing during my preparation for math exams or any type of assessment or more than a regular exam," has a mean of 4.90 and a standard deviation of 0.92, which means that the student would like to understand or comprehend more the formula of the problems in math in order to get higher scores or pass the examination. The second-to-last item that got the "strongly agree" response from the students, "As a student, I conclude that distance learning education provided a difficult understanding when it comes to learning math," had a mean value of 4.87 with an SD of 0.90 and a measurement rank level of 4 out of the 15 items in phase 1 of the questionnaire. This indicates that the students who responded to the survey had a difficult time understanding learning math problems if they used the distance learning modality because there are a variety of reasons why they are having difficulties in learning; for private students, they have a problem with the internet connection, which is why they are unable to attend the class, or they cannot interact with the teacher's discussion due to signal interference, whereas the students in public schools had a problem understanding the concept and example in the learning module. The last item had the strongest response from the respondents: "I have missed the interaction and cooperation with my classmates at school." Also, the presence of our teachers, particularly in math, was very significant. "I am unable to concentrate on learning mathematics because of the inconvenience caused by my family and the noise from our neighbors," this item had a mean value of (m = 4.75; SD = 0.95), with a rank level of 5. This means that this statement has a significant impact on the respondents, which is why they agreed on the response of "strongly agree." This item indicates that the students would like to have a physical discussion for them to interact with the math teachers and to have a cooperative relationship with their classmates due to group activity or any educational task related to math. They also instill the idea that learning at a distance poses additional challenges, such as the presence of noise in the environment and the availability of learning resources.

The perspective responses of the Grade 10 students had a significant impact on each item provided in the survey questionnaire. This indicates that their experience learning mathematics at a distance had both a negative and positive impact on them. Wherein, the negative effect is on the learning process, such that students cannot intellectually understand the concepts in math by using only the learning module, attending an online class, or even answering the worksheets in the Google Classroom or any other way of using online platforms. This implies that learning is not as high as it was in traditional learning because there is a possibility or instances where students simply get the answers online, particularly on Google, YouTube, or any other online source. For the positive effect, the students are unable to interact with others, indicating that they are either far from the virus or are unable to spread COVID-19, indicating the students' safety and allowing them to easily study or work their lesson at home without risking themselves from the pandemic. The responses had both a negative and positive impact on the Grade 10 students; however, if the Department of Education (DepEd) is to fully implement face-to-face learning, it should be instilled with following a safety measurement as well as at school and other relevant protocols to be developed. Thus, learning can foster greater willingness, and the determination to carry out one's responsibilities can be attained without hesitation.

Table 3. *The Evaluation of Distance Learning Mathematics by Grade 10 Junior High School Students, as well as Their Individual* Preferences for Distance Learning and Traditional Methods of Learning

Items	*Statements*	*Perspective Response*	*Frequency (n)*	*Percentage (%)*	*Rank Level*
1	Distance learning education is better suited to learning mathematics problems because it allows students to answer math problems without the assistance of math teachers, implying that they are more self-sufficient in completing the task.	YES	29	19.33	2
		NO	121	80.67	1
		Total	150	100	
2	I felt independent when learning through distance education because I was able to face the challenges of learning math subjects that I was unable to do in a classroom setting; however, having an interaction with the teacher at school makes me feel comfortable because of the skills and knowledge that our teachers can share with us.	YES	87	58.00	1
		NO	63	42.00	2
		Total	150	100	
3	Learning at a distance increases the likelihood that students will have less math learning because they may be reliant on searching for answers online or that their relatives and family will complete the task and even the examination.	YES	98	65.33	1
		NO	52	34.67	2
		Total	150	100	

4	Learning at school with the interaction of teachers will develop our skills because the most effective way to understand concepts in math is to have a teacher facilitate the students' learning so that they can independently answer the problems.	YES	132	88.00	1
		NO	18	12.00	2
		Total	150	100	
5	For me, if I had to choose, I would prefer a face-to-face class in mathematics learning over distance learning due to the pandemic. Why? Because having an in-person interaction could lead students like me to comprehend math because of the discussion that I might encounter physically as well as the guidance of the teacher, whereas learning at a distance would bring some negative factors for the students not to completely adhere to the tasks, such as depending on online searches or having a tutor answer the problems in math.	YES	142	94.67	1
		NO	8	5.33	2
		Total	150	100	

Legend: Sample Size of Population (150); Frequency and Percentage (n=%)

Table 3 presents the evaluation of distance learning mathematics by Grade 10 junior high school students, as well as their individual preferences for distance learning and traditional methods of learning. The findings of the study indicated that the preferences of the students were for the traditional face-to-face classes, which involve physical interaction. Based on the items provided, an in-person class would be far more interesting than distance learning. This item that indicates, "Distance learning education is better suited to learning mathematics problems because it allows students to answer math problems without the assistance of math teachers, implying that they are more self-sufficient in completing the task," had a high response of "NO" with a frequency of 121 out of 150 respondents and a percentage of 80.67%. It has been stated that the students are not interested in having distance learning for learning mathematics since they would like to have the presence of the teacher to guide and discuss the concepts of math, particularly the solving problems. Furthermore, this item, "I felt independent when learning through distance education because I was able to face the challenges of learning math subjects that I was unable to do in a classroom setting; however, having an interaction with the teacher at school makes me feel comfortable because of the skills and knowledge that our teachers can share with us," had a frequency of 87 out of 150 with a percentage of 58%. This item had a response of "YES," meaning that the students feel independent when they learn mathematics. The third item, "Learning at a distance increases the likelihood that students will have less math learning because they may be reliant on searching for answers online or that their relatives and family will complete the task and even the examination," had a high response of "YES" with a frequency of 98 and an equivalent percentage of 65.33%. This means that the respondents were unsure about learning less in math due to a lack of guidance from math teachers or because they were not physically able to learn, but they were independent in searching for answers online. This item is blasted with responses because of the experiences encountered by the students, who are grade 10 junior high school students. This item, "Learning at school with the interaction of teachers will develop our skills because the most effective way to understand concepts in math is to have a teacher facilitate the students' learning so that they can independently answer the problems," got a high response of "YES" with a frequency of 132 out of the 150 surveyed participants, or 88%. This item had a significant impact on the students because learning in the classroom is quite different from learning at home. Lastly, this statement: "For me, if I had to choose, I would prefer a face-to-face class in mathematics learning over distance learning due to the pandemic." Why? "Because having an in-person interaction could lead students like me to comprehend math because of the discussion that I might encounter physically as well as the guidance of the teacher," this had 142 responses with an equivalent percentage of 94.67%. This indicates that the students preferred to have face-to-face classes over distance learning. The learning process is based on the actual demonstration and discussion of the teacher, such as in math, where a more feasible way of explaining and demonstrating the concept or the structuring of a solution is needed for the students to easily comprehend the math problems.

Cassibba et al. (2020) explained that, despite distance learning like online education being useful platforms in the learning process, they may not be as appropriate for mathematics problems as traditional face-to-face interaction could provide. In this manner, the respondents also agreed with the teachers' perspectives on the challenges and difficulties of having a distance learning modality, particularly online and modular learning (Saro et al., 2022)

According to the study of Ostankowicz-Bazan (2016), the students had positively responded to the items provided by the researchers that focused on the flexibility of distance learning. However, distance learning had a negative impact on students' understanding, particularly when it came to math. In line with the study performed by Ratnawati (2018), it indicates the difficulty encountered by the learners due to the inconvenient nature of online learning, such as low connection and other environmental issues. Hence, this suggests that mathematics teachers are the best

way to improve the learning status of the students and their practices in the distance learning experience.

Nevertheless, it is necessary to pay attention to the state of the students' learning. The challenges with e-discovery that impede students from achieving their learning objectives will likely be the subject of future studies. In addition, Basilaia and Kvavadze (2020) suggest that the nature of online learning and other forms of instruction, such as module education, should be investigated considering students' conceptual understandings of learning (Saro et al., 2022).

Conclusion

In conclusion, based on the findings above, the student's perspective on learning mathematics through the distance learning experience was not as good as in the actual classroom. Though distance learning would provide or have benefits such as flexibility and independence in learning. However, when it comes to learning mathematics, that is not the case; according to the responses of Grade 10 students, they prefer a traditional education, which is in-person classes, because they can understand math with the help of the teacher, who discusses the necessary concepts in the math contents. Because they are learning through distance, such as through online education, it creates technical problems that greatly deprive them of lessons, or they are not able to attend the class because of the signal issue. The modular learning students cannot answer the module because they do not know the answer to it.

There has not been any research on how teaching, learning, and distance education interact in mathematics, despite the development of the technology and its widely anticipated usage in the subject. In order to properly teach mathematics online and to understand what makes for good learning in this setting, further study is required.

The distance learning employed in private and public institutions included synchronous and asynchronous learning, which had a negative and positive effect. Furthermore, the study's most notable finding was that students missed interacting with their peers because they spent so much time staring at screens on their electronic gadgets and focusing on the module provided by their teachers. Since maintaining the quality of education is of utmost importance, the researchers ought to make the most of this time for distant learning to enhance it across the board, starting with mathematics. Therefore, the findings of this study are crucial for those who make decisions about education.

In order to better understand students' opinions and study how their learning styles differ, future research will gather qualitative data. It will also explore how the teaching strategies used can impact students' impressions of distant learning. More solutions for distance learning should be researched as well.

References

Amoroso, E.J B. T., Dacoco E. P., Tajos, C. P., Enguio, L. A., Francisco, J. G., Saro, J. M., (2022). Teacher's Perceptions, Effectiveness, Administrative Issues, and School Challenges during the COVID-19 Epidemic: An Educational Sustainability. Psychology and Education: A Multidisciplinary Journal, Volume 5, Issue 1.

Almuraqab, N. (2020). Shall universities at the UAE continue distance learning after the COVID-19 pandemic? Revealing students' perspective. International Journal of Advanced Research in Engineering and Technology 11(5), 226-233. doi:10.34218/IJARET.11.5.2020.024

Astri, L. Y. (2017). Barrier factors that influence satisfaction of e-learning: A literature study. Advanced Science Letters, 23(4), 3767-3771. http://doi.org/10.1166/asl.2017.9007

Basilaia, G., & Kvavadze, D. (2020). Transitions to online education in schools during a SARS-Cov-2 coronavirus (COVID-19) pandemic in Georgia. Pedagogical Research, 5, em0060.

Bloomfield, J., Fisher, M.J., 2019. Quantitative research design. JARNA 22 (2), 27–30. Bozkurt, A., Sharma, R.C., 2020. Emergency remote teaching in a time of global crisis due to Corona Virus pandemic. Asian J. Dist. Educat. 15 (1), i–vi.

Britt, R. (2006). Online education: A survey of faculty and students. Radiologic Technology, 77(3), 183190

Brende, B. (2015). Why education is the key to development. World Economic Forum. https://www.weforum.org/agenda/2015/07/why-education-is-the-key development/

Cassibba, R., Ferrarello, D., Mammana, M. F., Musso, P., Pennisi, M., & Taranto, E. (2020). Teaching mathematics at distance: A challenge for universities. Education Sciences, 11(1), 1-20. http://doi.org/10.3390/educsci11010001

Covid-19 Stats. (2020). Retrieved from National Command Operation Center: https://ncoc.gov.pk/

Crawford, J., Butler-Henderson, K., Rudolph, J., & Glowatz, M. (2020). COVID-19: 20 countries' higher education intra-period digital pedagogy responses. Journal of Applied Teaching and Learning (JALT), 3(1).

Distance learning. (n.d.). In Merriam-Webster.com dictionary. https://www.merriamwebster.com/dictionary/distance%20learning

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2011). How to design and evaluate research in education. McGraw-Hill.

Fritz, A., Haase, V. G., & Rasanen, P. (Eds.). (2019). International

handbook of mathematical learning difficulties. Springer.

Gay, L. R., Mills, G. E., & Airasian, P. W. (2012). Educational research: Competencies for analysis and application. (10th ed.). Pearson.

Huang, R., Liu, D., Tlili, A., Yang, J., & Wang, H. (2020). Handbook on facilitating flexible learning during educational disruption: The Chinese experience in maintaining undisrupted learning in COVID-19 outbreak. Smart Learning Institute of Beijing Normal University.

Juliane, C., Arman, A. A., Sastramihardja, H. S., & Supriana, I. (2017). Digital teaching learning for digital native; Tantangan dan Peluang. Jurnal Ilmiah Rekayasa dan Manajemen Sistem Informasi, 3(2), 29-35.

Kaur, G. (2020). Digital Life: Boon or bane in teaching sector on COVID-19. CLIO an Annual Interdisciplinary Journal of History, 6(6), 416-427.

Noonoo, S. (2020). 'Students are lonely:' What happens when coronavirus forces schools online. https://www.edsurge.com/news/2020-03-02-students-are-lonely-whathappens-when-coronavirus-forces-schools-online

O 'Brien, C. (2020). France embraces distance learning experiments as coronavirus forces school closures. https://venturebeat.com/2020/03/13/france-embraces-distancelearning-experiment-as-coronavirus-forces-school-closures/

Ostankowicz-Bazan, H. (2016). Benefits and drawbacks of online education. doi:10.13140/RG.2.1.1385.0640

Perraton, H. D. (2000). Open and distance learning in the developing world. Routledge Falmer.

Perienen, A. (2020). Frameworks for ICT integration in mathematics education - A teacher's perspective. Eurasia Journal of Mathematics, Science and Technology Education, 16(6). http://doi.org/10.29333/ejmste/7803

Ratnawati, S. D. (2018). Developing online materials for tour guides. Journal of ELT Research: The Academic Journal of Studies in English Language Teaching and Learning, 3(1), 43-57. http://doi.org/10.22236/JER_Vol3Issue1pp43-57

Saro, J.M., Socuano, J.A., Socuano, F.D., Alcoverez, R.B., Hunahunan, R.D., & Tutor, D.B. (2022). The Impact of Distance Learning Modality on the Academic Performances of Grade 10 Students: A Case Study of San Vicente National High School in the Division of Agusan Del Sur. International Journal for Research Trends and Innovation. Volume 7, Issue 7. pp. 913-919, ISSN: 2456-3315, https://www.ijrti.org/papers/IJRTI2207139

Saro, J., Boquil, E., Lim, J., Boquil, R., Yu, M., (2022). Perceptions and Lived Experiences: A Phenomenological Study of Technical Vocational and Livelihood Strand Students during the New Normal Education. Psychology and Education: A Multidisciplinary Journal, 4(8), 729-740. https://doi.org/10.5281/zenodo.7150690

Saro, J., Cuasito, R., Doliguez, Z., Maglinte, F., Pableo, R., (2022). Teaching Competencies and Coping Mechanisms among the Selected Public Primary and Secondary Schools in Agusan del Sur Division: Teachers in the New Normal Education. Psychology and Education: A Multidisciplinary Journal, 3(10), 969-974.

Toquero, C. M. (2020). Challenges and opportunities for higher education amid the COVID-19 pandemic: The Philippine context. Pedagogical Research, 5(4).

Weeden, K., & Cornwell, B. (2020). The small-world network of college classes: Implications for epidemic spread on a university campus. Sociological Science, 7(9), 222–241. http://doi.org/10.15195/v7.a9

World Health Organization (WHO). (2020). Coronavirus disease (COVID-19) pandemic. 2020. https://www.who.int/

Wu, Z. (2020). How a top Chinese university is responding to coronavirus. World Economic Forum.https://www.weforum.org/agenda/2020/03/coronavirus-china-the challenges-ofonlinelearning-for-universities/

Zhong, R. (2020, March 17). The coronavirus exposes education's digital divide. The New York Times.https://www.nytimes.com/2020/03/17/technology/chinaschoolscoronavirus.htm

Affiliations and Corresponding Information

Mariamae M. Egtob, LPT, MSTM-Ongoing
Duangan National High School
Department of Education - Philippines

Vincent Sawate, , LPT, MSTS-Ongoing
Duangan National High School
Department of Education - Philippines

Ronnie Castillo, LPT, MSTM-Ongoing
Aurora National High School
Department of Education - Philippines

Ailyn Pacaoncis, LPT, MAEdEM-Ongoing
Tagbalili Elementary School
Department of Education - Philippines

Chona Ann Ricafort, LPT, MAEdEM-Ongoing
Tagbalili Elementary School
Department of Education - Philippines

Jeffry Saro, **LPT, MSciEd**
San Vicente National High School
Department of Education - Philippines