

Influence of Post Pandemic on Learners' Academic Performance in Mathematics

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Kimberly Grace Aglag-Macapagong

Math Teacher, Miyamura High School, Gallup, New Mexico, USA

kimgracemacapagong@gmail.com

Abstract:

This study investigated the influence of the post-pandemic environment on the academic performance in Mathematics of Grades 8 to 10 students at Clarita Bacalso Dacua (CBD) College in Inayawan, Cebu City, during the school year 2023-2024. Recognizing Mathematics as a core subject essential for fostering critical thinking and problem-solving skills, the study addresses the disruptions caused by the COVID-19 pandemic, which significantly impacted students' learning experiences and outcomes. The research employed a descriptive-correlational design to assess various factors influencing student performance, including student-related factors such as interest and study habits, and teacher-related factors encompassing teaching skills and instructional materials. Data were collected through a modified standardized survey questionnaire administered to a purposively selected sample of junior high school students. The findings reveal that both student-related factors (interest and study habits) and teacher-related factors (teaching skills and instructional materials) significantly influenced Mathematics performance post-pandemic. Respondents' performance was very satisfactory, and statistical results confirmed a significant relationship between post-pandemic factors and the academic performance of students in Mathematics.

Keywords: Influence of post-pandemic, performance in Mathematics, , Junior High School students, student-related influences, teacher-related influences

Introduction:

Nature of the Problem

The closure of schools and the loss of learning during the COVID-19 pandemic negatively impacted the current cohort of schoolchildren. Global evidence from past health and disaster-related emergencies shows that the impact extends well beyond the pandemic period. It is also likely to affect the children's economic potential and productivity in adulthood, thus undermining the country's competitiveness. The policy note analyzes critical issues related to the current schooling and learning situation and proposes policy options to prepare for in person schooling when this is possible (Pinili, 2022).

Students worldwide have been deeply impacted for two years after the pandemic, and not all their modules responded wholeheartedly. Students tended to copy answers from others without any understanding and say that they never actually learned. Many students cannot engage with modules while assisting their parents in the field. Mastery of the lesson is impossible to attain. One factor affecting the student's performance is the parents' lack of knowledge to assist their children (Dangle & Sumaoang, 2020). The New York Times, as cited in Xinhua (2022) stated that the pandemic has erased two decades of progress in Math and reading. The National test results released in September 2022 showed in stark terms the pandemic's devastating effects on American schoolchildren, with the performance of 9-year-olds in math and reading dropping to the levels from two decades ago. For the first time since the National Assessment of Educational Progress tests began tracking student achievement in the 1970s, 9-year-olds lost ground in math, and scores in reading fell by the most significant margin in more than 30 years.

The declines spanned almost all races and income levels and were markedly worse for the lowest-performing students. While top performers in the 90th percentile showed a modest drop — three points in math — students in the bottom 10th percentile dropped by 12 points in math, four times the impact. Students who struggled through the height of the COVID-19 pandemic between March 2020 and early 2023 still have trouble keeping up with coursework, according to a nonprofit NWEA study focusing on education research.

While the pandemic is now deemed over, the impacts on students are still apparent. Moliner et al. (2022) stated that the COVID-19 pandemic has had a significant effect on 9th grade students' mathematics achievement. Not specifically in the field of mathematics, the significant decrease in students' academic achievement during the COVID-19 pandemic has been also reported by Choi et al. (2020), Rahardjo and Pertiwi (2020), Al Salman et al. (2021), and Smith et al. (2021).

Mathematics is one of the core subjects in basic education that needs time and effort because of some influences that have caused students' performance to slow down. This study is also an avenue for some researchers to continue conducting studies post-pandemic. It may not stop during the pandemic only because some results can be helpful someday when another problem arises in our country or the world.

Current State of Knowledge

In most countries, Mathematics is one of the fundamental core subjects in primary and secondary education. This is because arithmetic and logical reasoning are the foundation of Science and Technology. The study of mathematics has varying effects on every facet of human existence. Mathematics is not only a subject and language on its own, but it also plays an important role in fostering students' critical, logical, problem-solving, and higher-level thinking. The science of magnitude and numbers is very useful in all areas. It is one of the most important and colorful subjects in any discipline (Silangan et al., 2023).

Mathematics is a key subject in school. It helps solve complex Science, technology, engineering, and financial difficulties. Calculating bills, budgeting, investing, and choosing a job need Math. Early Arithmetic education is also vital. Mathematics is essential in many aspects of life. Calculating expenses, planning budgets, selecting, and cooking are all needed, as well as math. Engineers, architects, financiers, doctors, and technologists will utilize it. Mathematical principles underlie buildings, bridges, roads, and computers. Finance insurance and manufacturing use Math to assess data and predict consequences. Data analysts use Math to evaluate massive amounts of data and draw conclusions.

Students have different perceptions of mathematics. Even today, most people believe mathematics is all about calculation and computation. However, to mathematicians, calculations and computation are just tools for understanding mathematical concepts that produce solutions to complex real-world problems that make life easier. It has been established that mathematical abilities are necessary for academic success and working effectively in everyday life (Silangan et al., 2023).

The lack of basic mathematics skills at the secondary level has been recognized as an issue known as a "Mathematics Problem." Even in poorer countries, it has become a critical concern. Many students struggle to pass mathematics subjects, especially those in line with studying quantitative engineering, science, commerce, and even education. The detailed research is in progress and approved for action; we expect that the retention performance level of all grade school learners will upgrade. Suppose not 100 percent but will eventually make them globally competitive, particularly in Mathematics. Students are expected to learn any idea presented from simple to complex as they construct new ideas based on their previously known knowledge (Pagaran, 2025).

The upsurge of COVID-19 cases has caused a tragic loss of human life worldwide. To contain and reduce the spread of COVID-19, the people in authority have implemented lockdowns, health protocols, travel restrictions, and closures of schools and other establishments. One of the most affected sectors is the academe, where the widespread disruptions have impacted the usual delivery of lessons among students. This case is brought about by the migration of instructional delivery from face-to-face mode to modular distance learning (Silangan et al., 2023).

Theoretical Underpinnings

This study is anchored in a strategic integration of theoretical frameworks and legal foundations. The incorporation of these legal theories and legal bases not only strengthens the methodological foundation but also ensures its alignment with established educational principles and national policies. The following theoretical frameworks supported this study: Social Influence Theory by Herbert Kelman, Resiliency Theory, and Ecological Systems Theory by Urie Bronfenbrenner. These theoretical frameworks were further reinforced by significant legislative principles, namely Section 2 of Republic Act No. 10533, also known as the "Enhanced Basic Education Act of 2013 (K - 12 Law, Philippines)"; and DepEd Memorandum Order No. 054, s. 2024, also known as "Pilot Implementation of the Matatag Curriculum."

Objectives

The study assessed the influence of post-pandemic on the academic performance in Mathematics of the Junior High School students at Clarita Bacalso Dacua (CBD) College, Inayawan Cebu City, for school year 2023-2024 as the basis for a strategic intervention plan. Specifically, this study sought answers to the following specific objectives: (1) to describe the profile of the respondents in terms of age and gender; parents' highest educational; and combined family monthly income; (2) to assess the level of influence of post pandemic on the academic performance of the respondents in Mathematics in terms of student-related influence and teacher-related influence; (3) to assess the level of academic performance of the students in Mathematics in post-pandemic; and (4) to test the significant

relationship between the influence of post-pandemic and the academic performance of the respondents in Mathematics; and (5) to propose a strategic intervention plan.

Methodology:

Research Design

This study utilized a descriptive correlational design to investigate the relationship between the post-pandemic impact and students' academic performance in Mathematics. Correlational design is a type of study in which no variables are manipulated. This type of research design explores relationships between existing variables (Wilson & Joye, 2019). Like descriptive research, correlational research focuses on statistical analysis rather than on how the data is collected. In addition, like experimental research, correlational research is also explanatory in nature. Unlike experiments, correlational studies do not determine causation. Rather, correlational design can go in a different direction than cause and effect, which predicts future values. Furthermore, correlational research is often performed when it is impossible to conduct experiments (Privitera, 2018).

Study Respondents

The study's population consisted of 54 Junior High School students from Clarita Bacalso Dacua (CBD) College in Inayawan, Cebu City.

Instrument

This study utilized a modified standardized survey questionnaire with three parts, adapted from the Academic Performance survey.

Data Gathering Procedure

The data collection followed three phases. In the pre-data gathering phase, the researcher sought permission from the school principal, secured parental consent, and scheduled the survey for Grades 8 to 10. During the data-gathering phase, students answered a structured, modified paper-based questionnaire using a 5-point Likert scale, administered per section in the school library. In the post-data gathering phase, the researcher verified, cleaned, tallied, and organized the responses for analysis using statistical tools to ensure the accuracy and reliability of the findings.

Data Analysis and Statistical Treatment

The data collected were gathered and treated using descriptive and inferential statistics such as frequency count, simple percentage, weighted mean, and Pearson's r .

Ethical Consideration

The ethical principles observed throughout the study are (1) Informed Consent Form, where each respondent received a comprehensive consent form detailing the study's objectives, methods, potential risks, and potential benefits. They were informed that their participation was entirely voluntary and that they may withdraw without facing any consequences. (2) Privacy and Confidentiality, wherein the identities of the respondents and the schools they represent remained anonymous. The data were stored securely to prevent unauthorized disclosure, and only authorized researchers had access to them.

Results and Discussions:

This section presents, analyzes, and interprets the data that were gathered to carry out the pre-determined objectives of the study. The quantitative data gathered from the respondents' responses to the data-gathering instrument were tallied, tabulated, and subjected to statistical analysis and interpretation following the objectives of the investigation.

Table 1
Profile of the Student Respondents

Profile	Male		Female		Total	
	f	%	f	%	f	%
Age						
• 16 years old and above	4	7.41	2	3.70	6	11.11
• 15 years old	15	27.78	12	22.22	27	50.00
• 14 years old	5	9.26	12	22.22	17	31.48
• 13 years old	2	3.70	2	3.70	4	7.41
Total	26	48.15	28	51.85	54	100
	Father		Mother			
Highest educational attainment	f	%	f	%		
• Doctorate graduate	2	3.70	2	3.70		
• With Doctorate units	1	1.85	0	0.00		
• Master's graduate	1	1.85	2	3.70		
• With Master's units	0	0.00	0	0.00		
• College graduate	17	31.48	13	24.07		
• College level	6	11.11	8	14.81		
• High School graduate	12	22.22	19	35.19		
• High School level	8	14.81	6	11.11		
• Elementary graduate	1	1.85	2	3.70		
• Elementary level	2	3.70	1	1.85		
• No formal education	2	3.70	1	1.85		
• No response	2	3.70	0	0.00		
Total	54	100.00	54	100.00		
Combined family income (in pesos)	f	%				
• Above 30,000	14	25.93				
• 25,001-30,000	5	9.26				
• 20,001-25,000	7	12.96				
• 15,001-20,000	3	5.56				
• 10,001-15,000	10	18.52				
• 10,000 and below	15	27.78				
Total	54	100.00				

Table 1 summarizes the profile of the respondents in terms of age, gender, highest educational attainment of father and mother, and combined monthly family income. Data reveal that half of the respondents are 15 years old (50%), followed by 14-year-old respondents, comprising 17 or 31.48%. The distribution shows a slight gender disparity, with 22 females (51.85%) and 26 males (48.15%). This reflects a relatively balanced gender representation in the sample, although male respondents are more numerous in the 15- and 16-year-old age categories. The data indicate that the sample is relatively young, which is relevant for understanding the context of the study on academic performance and related factors. In a systematic review on the factors predicting Mathematics achievement in PISA by Wang et al. (2023), age tended to be positively associated with math achievement in 11 relevant studies. Nine studies found a positive association between age and math achievement, meaning the older students were, the higher the math scores that they obtained (e.g. Rodríguez et al., 2020). Two studies found opposite results, with older students performing significantly worse in Australia (Posso, 2016) and in 62 countries (Schmidt et al., 2015). In terms of gender, Guo et al. (2015) and Ganley and Lubienski (2016), as cited in Rodriguez et al. (2020), reported that girls report lower levels of individual interest and perceived competence in mathematics. Additionally, the results of PISA 2015 (Ministerio de Educación Cultura y Deporte [MECD], 2016), also cited in Rodriguez et al. (2020), showed that the difference in mathematics performance between 15-year-old boys and girls is an average of 8 points in OECD countries and 11 points in the European Union (EU), with boys scoring higher than girls.

Almost one-third of the fathers are college graduates (31.48%), while twelve (22.22%) are high school graduates. On the other hand, more than one-third (35.19%) of the mothers are high school graduates, while 13 (24.07%) are college graduates. It is interesting to note that some fathers and mothers have attained only elementary education, and a few fathers have no formal education. These results suggest that some parents may have limited capacity to provide academic support to their children, potentially affecting the children's learning outcomes, motivation, and overall academic performance in school. In a study conducted by Idris et al. (2020), it was found that a high education

among fathers and mothers positively contributes to their children's academic achievement. A strong correlation was observed between parents' education and students' academic achievement.

The data also reveal that more than one-fourth (27.78%) of the respondents' families have a combined monthly income of Php 10,000 and below, while one-fourth (25.93%) have a combined monthly income above Php 30,000. This shows an income disparity among the respondents' families. While some students may benefit from financial stability, other students face economic challenges that could influence their access to educational resources and opportunities.

Table 2

Level of Post-Pandemic Student-Related Influences on the Academic Performance of the Respondents in Mathematics

Indicators	Weighted Mean	Standard Deviation	Verbal Description
Interest			
1. I make myself prepared for the Math subject.	3.57	0.96	High
2. I listen attentively to my Mathematics teacher's lecture.	3.94	0.88	High
3. I actively participate in the discussion, answering exercises and/or clarifying things I did not understand	3.65	1.08	High
4. I want to get good grades on tests, quizzes, assignments, and projects.	4.15	1.22	High
5. I get frustrated when the discussion is interrupted, or the teacher is absent.	3.15	1.19	Moderate
Aggregate Weighted Mean/SD	3.69	1.07	High
Study Habits			
1. I do my assignment regularly.	4.00	1.18	High
2. I exert more effort when I do difficult assignments.	3.96	0.91	High
3. I spend by vacant time in doing assignments or studying my lessons.	3.41	1.00	High
4. I study the lessons I missed if I was absent from the class.	4.00	1.08	High
5. I study and prepare for quizzes and tests.	3.98	1.00	High
6. I study harder to improve my performance when I get low grades.	4.07	1.15	High
7. I spend less time with my friends during school days to concentrate more in my studies.	3.11	1.21	Moderate
8. I prefer finishing my assignment first before watching any television programs.	3.87	1.10	High
9. I see to it that extracurricular activities do not hamper my studies.	3.50	0.95	High
10. I have a specific place to study at home which I keep clean and orderly.	3.72	1.14	High
Aggregate Weighted Mean/SD	3.76	1.07	High
Grand Mean	3.73		High

Legend: 4.21-5.00-Very High; 3.41-4.20-High; 2.61-3.40-Moderate; 1.81-2.60-Low; 1.00-1.80-Very Low

Table 2 presents the level of post-pandemic student-related influences on the academic performance of the respondents in Mathematics. The grand mean of 3.73 indicates that, overall, student-related factors generally influence students' academic performance in Mathematics. In terms of interest, the aggregate weighted mean of 3.69 and an aggregate standard deviation of 1.07 indicate a high level of post-pandemic student-related influence on the respondents' academic performance in Mathematics. The indicator that obtained the highest mean, with high verbal description, is the desire to *get good grades on tests, quizzes, assignments, and projects* (4.15), followed by *listening attentively to the Math teacher's lecture* (3.94). This means that students remain motivated to earn good grades in Math and value the guidance of their Math teacher despite the challenges brought by the pandemic. Meanwhile, the indicator that obtained the lowest mean, with a moderate verbal description, is feeling frustrated when the discussion is interrupted or when the teacher is absent (3.15). This shows that students' interest is affected by occasional disruptions. Puracan et al. (2023) conducted a study on Math interest and performance of Grade 11 students in General Mathematics. The study found that the academic performance of the respondents was very

satisfactory. There is a negligible positive correlation, yet significant relationship, between the respondents' interest in mathematics and performance in General Mathematics. Moreover, there is a significant difference among the academic performance of the respondents when grouped according to their academic strand but none when they are grouped according to the type of school they are enrolled in. It was concluded that the level of interest in mathematics is significantly related to the performance in General Mathematics especially among those with higher level of academic performance.

As regards study habits, the aggregate weighted mean of 3.76 and an aggregate standard deviation of 1.07 indicate a high level of post-pandemic student-related influence on the respondents' academic performance in Mathematics. The indicator that obtained the highest mean, with a high verbal description, is *studying harder to improve performance when receiving low grades* (4.07), followed by *regularly doing assignments* (4.00) and *studying missed lessons when absent from class* (4.00). Other high indicators also include *studying and preparing for quizzes and tests* (3.98), *exerting more effort when doing difficult assignments* (3.96), and *finishing assignment first before watching any television programs* (3.87). This implies that students demonstrate a strong sense of responsibility in improving their academic performance by exerting extraordinary effort, completing tasks, and catching up on missed lessons. These are all positive traits that reflect discipline and commitment to learning. On the other hand, the indicator that obtained the lowest mean, with a moderate verbal description, is *spending less time with friends during school days to concentrate more on studies* (3.11). This shows that students still value social connections and find it difficult to lessen time spent with friends. The findings validate the study of Balbacal (2023), which found that students' study habits in mathematics, particularly in terms of homework and assignments, time allocation, reading and note-taking, and teacher consultation, were assessed as being highly significant, suggesting their importance in academic success. Statistically, a significant relationship exists between students' study habits in mathematics, based on the four variables, and their academic performance.

Table 3

Level of Post-Pandemic Teacher-Related Influences on the Academic Performance of the Respondents in Mathematics

Indicators	Weighted Mean	Standard Deviation	Verbal Description
Teaching Skills			
1. Explains the objectives of the lesson clearly at the start of the period.	3.93	1.15	High
2. Has mastery of the subject matter.	3.91	1.12	High
3. It is organized in presenting subject matters by systematically following the course outline.	3.70	1.09	High
4. It is updated with the present trends, relevant to the subject matter.	3.78	0.95	High
5. It uses various strategies, teaching aids/ devices and techniques in presenting the lessons.	3.76	1.04	High
Aggregate Weighted Mean/SD	3.81	1.07	High
Instructional Materials			
1. Uses chalk and blackboard in explaining the lessons.	4.13	1.20	High
2. Workbooks/ textbooks	3.67	1.27	High
3. Uses Power point presentations	2.81	1.29	Moderate
4. Articles	3.20	1.17	Moderate
5. Uses materials for project development	3.57	1.07	High
Aggregate Weighted Mean/SD	3.48	1.20	High
Grand Mean	3.65		High

Legend: 4.21-5.00-Very High; 3.41-4.20-High; 2.61-3.40-Moderate; 1.81-2.60-Low; 1.00-1.80-Very Low

Presented in Table 3 is the level of post-pandemic teacher-related influences on the academic performance of the students in Mathematics. The grand mean of 3.65 indicates that, overall, teacher-related factors generally influence students' academic performance in Mathematics.

Teaching skills, as a teacher-related influence, have an aggregate mean of 3.81 and a standard deviation of 1.07, which is interpreted as high. This indicates that teaching skills are strongly manifested among the teachers and positively influence the delivery of Math instruction and the overall performance of students in Math. The indicator that obtained the highest mean, with a verbal interpretation of high, is the *teacher's skill in clearly explaining the objectives of the lesson at the start of the period* (3.93), followed by the *teacher's mastery of the subject matter*

(3.91). Similarly, the *teacher being updated with current trends relevant to the subject matter* was also regarded as having a high influence on the academic performance of students in Math (3.78). The findings suggest that students value teachers who clearly discuss the objectives of each lesson and demonstrate mastery of the subject matter. Students also appreciate teachers who stay updated with the current trends, showing that these educators exert extra effort to learn new approaches and strategies for effectively delivering Math lessons. As a result, students become more engaged in the learning process, thereby improving their performance. The findings corroborate with the study of Oluwadayo et al. (2020) who found that teachers' skills of commitment, motivation and communication when taken together, will significantly predict students' achievement in mathematics. Also, teachers' communication skills alone will significantly predict students' achievement in mathematics. Furthermore, the result of the study showed that teachers' commitment alone will significantly predict students' achievement in mathematics. In the same vein, the result of the findings revealed that teachers' motivation alone will significantly predict students' achievement in mathematics.

Instructional materials, as a teacher-related influence, have an aggregate mean of 3.48 and a standard deviation of 1.20, is also interpreted as high. This implies that instructional materials are considered valuable in making Math lesson clearer and engaging. Incorporating instructional materials in every Math instruction can positively impact students' understanding of Math concepts and improving their overall performance. The indicator that obtained the highest mean is the use of the chalkboard and blackboard in explaining the lessons (4.13), followed by the use of workbooks and textbooks (3.67). The findings suggest that despite the availability of modern teaching tools, students still find traditional resources like chalkboards, blackboards, workbooks, and textbooks very helpful in learning Mathematics.

This relates to an article in Stanford Daily titled, *Why do Stanford math professors still use chalk?* Xie (2021) wrote that when mathematics lecturer Christine Taylor asked her Math 51 students in class whether they prefer she write on chalkboards or project her lecture notes, the students were in lockstep: chalkboards are better. And the students are not alone in their preference. Mathematics professor Brian Conrad, the director of undergraduate studies for the Mathematics Department, said that nearly 100% of math faculty members at Stanford teach using chalk and chalkboards. This partiality for chalk, according to fourth-year Mathematics Ph.D. student Libby Taylor, is shared by graduate students and teaching assistants. While the use of chalk is a cultural element for most mathematicians, Conrad also noted several distinct features of chalk in comparison with slides or projections. The nature of mathematical derivations and the step-by-step process is hard to capture through slides. Conrad added that although using slides is more useful when giving a popular audience talk, chalk and chalkboards are much more effective for classroom instruction.

Meanwhile, the indicator with the lowest mean, with a moderate verbal description is the use of PowerPoint presentations (2.81), and the use of article (3.20). In a study conducted by Mensah et al. (2022), they found that the use of PowerPoint presentations in mathematics likely increase Senior High School (SHS) students' achievement in mathematics and also found to be a good instructional approach that can be employed to narrow the gap in achievement levels between endowed and less endowed SHSs. The findings also indicated that technology integration, using PowerPoint presentations could not bridge the existing academic achievement gap in mathematics between students in endowed schools and those in less endowed schools. It was found that students in the endowed school outperformed those in the less endowed school when both groups were taught using PowerPoint presentation approach. This could be as a result of the existing challenges that less endowed SHSs face in terms of entry characteristics, infrastructure, among others.

Table 4
Level of Academic Performance of the Respondents in Mathematics

Level	Numerical Range	Frequency	Percentage
Outstanding	90 – 100	23	42.59
Very Satisfactory	85 – 89	22	40.74
Satisfactory	80 – 84	9	16.67
Fairly Satisfactory	75 – 79	0	0.00
Did Not Meet the Expectations	Below 75	0	0.00
Total		54	100.0
Mean			88.57
St. Dev.			4.27

Depicted in Table 4 is the level of academic performance of students in Mathematics. More than two-thirds (42.59%) of the students demonstrated outstanding performance, while 40.74% achieved a very satisfactory level. Additionally, nine students (16.67%) performed satisfactorily. The students' mean average in Mathematics is 88.57, with a standard deviation of 4.27. The findings suggest that most students are performing well in Mathematics, with more than 80% reaching outstanding and very satisfactory levels. This shows that Mathematics teachers using effective

instructional approaches and strategies and are able to engage students effectively in the learning process. The presence of students with only satisfactory performance suggests a need for extra support to help them reach their full potential.

Filipino students were among the lowest performing groups of students among all the participating countries in the 2018 Programme for International Student Assessment (PISA). In mathematics, less than 20% of students demonstrated the minimum proficiency level (Level 2), while more than 50% showed very low proficiency (below Level 1). Scoring below the lowest level of proficiency in the PISA, these Filipino students have been clearly left behind in terms of mathematics education; more than half of this age group of Filipino students have inadequate mathematical skill compared to their peers in other parts of the world. The poor performance in mathematics also varied in degree between the students in public and private schools, where the means were 343 and 395, respectively (Department of Education, 2019).

Table 5

Test of the Relationship between the Influence of Post-Pandemic and the Academic Performance of the Students in Mathematics

Variables	r-value	Strength of Correlation	p-value	Decision	Remarks
Influence and Math Performance	0.920*	Strong Positive	0.000	Reject Ho	Significant

*significant at $p < 0.05$ (two-tailed)

Table 5 illustrates the relationship between the influence of the post-pandemic period and the academic performance of the student-respondents in Mathematics. The table presents the results of the correlation analysis. The r-value of 0.920 indicates a strong positive correlation between the post-pandemic factors and students' academic performance in Mathematics. The p-value is 0.000, which is significant at the 0.05 level. Therefore, the null hypothesis is rejected, indicating a statistically significant relationship between the two variables.

These findings validate the study of Moliner et al. (2022) that the COVID-19 pandemic is having a significant and negative effect on 9th grade Spanish students' mathematics achievement. The magnitude of that effect may be medium to large. Organizational changes in the educational settings, lack of motivation outside school, monotony, and students' lack of responsibility may be factors that explain this phenomenon. Although this pandemic has significantly affected both male and female students' mathematics achievement, male students appear to be more affected by the situation, showing a significantly greater decrease in scores compared to their female peers. The higher perceived responsibility and ability to adapt to new learning environments that previous studies have attributed to female students compared to their male counterparts may explain this difference.

Conclusions

The post-pandemic period has significantly influenced students' interest and study habits, as well as their perceptions of their teachers' teaching skills and the use of instructional materials. The level of academic performance among students has been more than satisfactory, and a significant relationship exists between the impact of the post-pandemic period and the academic performance of the students in mathematics. The study recommends a strategic intervention plan based on its findings, focusing on conducting seminars and training for both teachers and students to enhance interest, assessing lessons to determine learning outcomes, providing effective study habit strategies, promoting peer or group study, conducting research on study habits and appropriate instructional materials based on students' needs, and incorporating assistive technology in the classroom to boost students' academic performance in Mathematics.

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