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RESEARCH ARTICLE

Challenges Encountered by the Junior High School Students and their Academic Performance in the Online Learning during Covid–19 Pandemic

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ABSTRACT

This study involved the challenges encountered by the junior high school students during the pandemic. Furthermore, these challenges were correlated to the academic performance of the respondents. The study used the descriptive-correlational method of research with a properly adopted questionnaire as the research instrument. Data were taken from the 428 junior high school students at the Polytechnic University of the Philippines Laboratory High School. Student isolation and the learning environment were the biggest challenges that the students encountered. These challenges have significant relationship with the academic performance of the respondents. On the other hand, self-regulation, technological literacy and competency, technological sufficiency, technological complexity, and learning resource challenges have no significant relationship with the student's academic performance. It is recommended that school administrators should create a series of webinars/seminars for students on how to handle such challenges that they have encountered. Moreover, parents must be given a series of workshops to learn techniques and strategies to teach or help their children at home while attending online classes. Teachers are also recommended to closely monitor their students' progress.

INTRODUCTION

Since 1990s, the world seen substantial shifts in the landscape of education because of constantly becoming larger influence of technology. One such development is the adoption of online learning across different learning contexts, whether formal or informal, academic, and non-academic, and residential or remotely.

Recently, the education system has faced an unprecedented health emergency that has transformed its foundation. Thus, various governments across the world have launched a crisis response to alleviate the adverse impact of the pandemic on education.

The current circumstance is unique as it could aggravate the challenges experienced during online learning due to restrictions in movements and health protocols (Gonzales et al, 2020, Kapasia et al, 2020). To date, many studies have investigated this area with a focus on student mental health (Copeland et al, 2021, Fawas et al, 2021), but there remains a gap in understanding how specific challenges encountered during the pandemic impact academic performance.

Institutions, administrators, teachers, students, and even parents have found themselves unexpectedly involved in the distance education process during the Covid-19 pandemic. Schools have been forced into a learning flow that is complex and constrained because of the shift from direct instruction to indirect approaches (Ramitadala et al, 2020). The online course has been created and learning and teaching processes become standard. The teacher must set up the classroom and ensure that the students can understand the topic. Assessments, assessments, and even examinations were

administered digitally. The school, teachers, and students have all been greatly impacted by this process. Individuals have unavoidably encountered unique challenges and barriers in institutions throughout this process. Closing schools, not having the necessary tools to engage in classes, being unable to access internet resources from home, and being unable to leave their homes for an extended period have all had a psychological impact on students (Apriyanti, 2020).

Another element that should be taken into consideration is the poor technical infrastructure of educational institutions. Such elements hinder the effectiveness of the implemented education. Problems must be acknowledged if distance learning is to succeed.

According to Davis et al (2019), student hurdles to online learning may include misunderstanding expectations, poor time management, and interpersonal communication, whereas instructor barriers may involve expectations clarification, feedback delivery, and interpersonal interactions. In their study based on the literature, O'Doherty et al (2018) noted that obstacles to online learning in medical training could include time constraints, a lack of technical expertise, poor infrastructure, and other factors.

Lack of institutional support and methods, as well as everyone's unfavorable sentiments, were all present. Burns (2011) listed three obstacles to the adoption of web-based distance education as lack of reliable technology, high-speed internet, student and instructor skill sets, and support services in the field of teacher education. To remove, reduce, or otherwise address the obstacles in future remote education implementations, it is critical to disclose these issues. It casts light on the direct impact of the pandemic on the challenges that students in an online learning space.

Despite these insights, there is a lack of detailed research focusing on the specific challenges faced by junior high school students in this unique context, particularly regarding how these challenges correlate with their academic performance. This study aims to address this gap by examining the extent of challenges related to self-regulation, technological literacy and competency, student isolation, technological sufficiency, technological complexity, learning resources, and learning environment. Furthermore, it seeks to determine how these challenges affect students' academic outcomes, thereby providing a comprehensive understanding of the interplay between online learning challenges and academic performance during the pandemic.

The classification of challenges which will be used in this study is based on Rasheed et al's (2020) and Barrot et al's (2021) review of students' experience in an online learning environment. These challenges are grouped into five general clusters, namely, Self-Regulation Challenge (SRC), Technological Literacy and Competency Challenge (TLCC), Student Isolation Challenges (SIC), Technological Sufficiency Challenge (TSC), and Technological Complexity Challenges (TCC).

To extend Rasheed et al (2020) categories and to cover other potential challenges during online classes, two more clusters were added, namely Learning Resource Challenges (LRC) and Learning Environment Challenges (LEC) (Buehler, 2004).

Since learning environment at home and learning resources available to students has been reported to significantly impact the quality of learning and their achievement of learning outcomes (Drane et al, 2020), the inclusion of LEC and LRC would allow us to capture other important challenges that students experience during pandemic.

This study sought to examine the challenges encountered by the Junior High School students in the online learning. Specifically, it designed to answer the following questions: 1) What is the extent of challenges that the students in an online learning environment in terms of self-regulation challenges, technological literacy and competency challenges, students' isolation challenges, technological sufficiency challenges, technological complexity challenges, learning resource challenges, learning environment challenges? 2) What is the academic performance of the junior high school students in the conduct of online learning? 3) Is there a significant relationship between the challenges encountered by the students in online learning and their academic performance?

MATERIALS AND METHODS

A descriptive-correlational analysis was conducted to explore the relationships between the challenges encountered by junior high school students during online learning and their academic performance. This type of analysis was chosen to identify associations between variables without

inferring causal relationships, following the approach outlined by Boudah (2013). To summarize and describe the academic performance and the challenges faced by respondents, the arithmetic mean was calculated, while the standard deviation was used to assess the spread of the data distribution.

Pearson correlation analysis was employed to measure the strength and direction of the relationships between the identified challenges and academic performance. Before conducting the correlation analysis, assumptions such as linearity, normality, and homoscedasticity were checked to ensure the validity of the results. Outliers were identified and assessed for their potential impact on the analysis. Where outliers were found to disproportionately influence the results, they were either transformed or excluded from the analysis, depending on their nature and the context of the data.

To further assess the relationship between challenges and academic performance, linear regression analysis was performed using Microsoft Excel. This allowed for the determination of whether the challenges significantly predicted academic outcomes. The criteria for significance were set at a p-value of less than 0.05, meaning that any relationship with a p-value below this threshold was considered statistically significant. These detailed steps and precautions ensured the transparency and rigor of the statistical methods used in this study, providing a reliable analysis of the data collected.

Data were collected from the entire population of 428 junior high school students at the Polytechnic University of the Philippines Laboratory High School. Since the entire population was included, no specific sampling method, such as random or convenience sampling, was necessary. This approach was chosen to ensure that the findings are fully representative of the student body, thereby eliminating sampling bias and providing a comprehensive understanding of the challenges encountered by all students in this specific educational context. By studying the entire population, the research offers a complete picture of the relationship between the challenges faced during online learning and the academic performance of the junior high school students, thus strengthening the validity and generalizability of the results within this setting.

The data were collected using an online survey questionnaire via google form. The development and validation of the questionnaire involved a thorough process, including literature review, expert validation, and pilot testing. The reliability of the questionnaire was ensured through statistical analyses such as Cronbach's alpha and test-retest reliability. This comprehensive approach enhances the credibility of the questionnaire and supports the validity of the study's findings

Informed consent forms were be given to the respondents and ethics clearance will be requested prior to the conduct of the survey. In addition to obtaining informed consent from all participants, the study adhered to strict ethical guidelines to ensure the protection of participants' rights and confidentiality throughout the research process. All personal information collected during the study was anonymized, with unique identifiers assigned to each participant to prevent the identification of individual responses. Data were securely stored on password-protected devices, and access was restricted to the research team only. Participants were informed of their right to withdraw from the study at any time without any consequences, ensuring their autonomy was respected. These measures were implemented to maintain the confidentiality of participants' information and protect their rights throughout the research process, thereby upholding the highest standards of ethical conduct.

RESULTS

Table 1: The extent of challenges that the students encountered in an online environment

CHALLENGES	$\underline{\bar{x}}$	**SD**
Self-Regulation Challenges (SRC)	1.95	0.72
1. I delay tasks related to my studies so that they are either not fully completed by their deadline or had to be rushed to be complete.	1.82	0.71
2. I fail to get appropriate help during online classes.	1.92	0.68
3. I lack the ability to control my own thoughts, emotions, and actions during online classes.	2.05	0.71

4. I have limited preparation before an online class.	2.11	0.71
5. I have poor time management skills during online classes.	1.85	0.81
Technological Literacy and Competency Challenges(TLCC)	**1.93**	**0.71**
7. I lack competence and proficiency in using various interfaces or systems that allow me to control a computer or another embedded system for studying.	1.96	0.80
8. I resist learning technology.	1.97	0.93
9. I am distracted by an overly complex technology.	1.66	0.92
10. I have difficulties in learning a new technology.	2.14	0.96
11. I lack the ability to effectively use technology to facilitate learning.	1.97	0.93
12. I lack knowledge and training in the use of technology.	1.82	0.70
13. I am intimidated by the technologies used for learning.	1.86	0.82
14. I resist and/or am confused when getting appropriate help during online classes.	1.85	0.44
15. I have poor understanding of directions and expectations during online learning.	2.2	0.58
Student Isolation Challenges (SIC)	**3.74**	**0.92**
16. I feel emotionally disconnected or isolated during online classes.	3.41	0.82
17. I feel disinterested during online class.	3.86	0.72
18. I feel unease and uncomfortable in using video projection, microphones, and speakers.	3.72	0.81
19. I feel uncomfortable being the center of attention during online classes.	3.97	0.83
Technological Sufficiency Challenges (TSC)	**1.94**	**0.92**
20. I have an insufficient access to learning technology.	2.08	0.73
21. I have an outdated technology.	1.97	0.84
22. I do not have internet access to learning technology	2.1	0.77
23. I do not have internet access during online classes.	1.47	0.74
24. I have low bandwidth and slow processing speeds.	1.57	0.71
25. I experience technical difficulties in completing my assignments.	2.46	0.69
Technological Complexity Challenges (TCC)	**2.31**	**0.65**
26. I am distracted by the complexity of the technology during online classes.	2.42	0.61
27. I experience difficulties in using complex technology.	2.17	0.65
28. I experience difficulties when using longer videos for learning.	2.34	0.64
Learning Resources Challenges (LRC)	**2.75**	**0.54**
29. I have an insufficient access to library resources.	2.87	0.43
30. I have an insufficient access to laboratory equipment and materials.	2.83	0.41
31. I have limited access to textbooks, worksheets, and other instructional materials.	3.16	0.35

32. I experience financial challenges when accessing learning resources and technology.	2.80	0.42
Learning Environment Challenges (LEC)	**3.54**	**0.54**
33. I experience online distractions such as social media during online classes.	3.41	0.62
34. I experience distractions at home as a learning environment.	3.46	0.68
35. I have difficulties in selecting the best time and area for learning at home.	3.46	0.55
36. Home set-up limits the completion of certain requirements for my subject (e.g., laboratory and physical activities).	3.81	0.64
Grand Mean	**2.59**	**0.59**

Legend: 1.00 – 1.79 Strongly Disagree; 1.80 – 2.59 Disagree; 2.60 – 3.39 Neither agree nor disagree; 3.40 – 4.19 Agree; 4.20 – 5.00 Strongly agree

Table 1 shows the extent of challenges encountered by the junior high school students in an online environment. Generally, students ***disagree*** on the challenges they encountered during their online learning and garnered a mean score of 2.59. More specifically, students answered ***"disagree"*** on Technological Literacy and Competency Challenges with mean scores from 1.66 to 2.14. On the other hand, students responded "agree" on Student Isolation Challenges and Learning Environment Challenges with mean scores from 3.41 to 3.97 and 3.41 to 3.81, respectively. Most (4 out of 7 indicators) of the students' responses per indicator perceived that they **"disagree"** on the challenges they encountered. It is also observed that lower variability in the scores were assigned by the respondents (SD = 0.59).

Table 2: General weighted average (GWA) grade of junior high school students in the SY 2021 - 2022

Grade Level - Section	Mean Grade	Interpretation	SD
7 - Peace	92.23	Very Good	2.25
7 - Unity	92.64	Very Good	2.15
7 - Prosperity	93.08	Very Good	2.29
8 - Loyalty	92.26	Very Good	2.35
8 - Honesty	91.80	Very Good	1.97
8 - Sincerity	90.01	Very Good	2.45
9 - Entrepreneurship	92.95	Very Good	0.78
9 - Bookkeeping	94.12	Excellent	1.89
9 - Office Technology	90.65	Very Good	2.46
10 - Entrepreneurship	92.92	Very Good	2.01
10 - Bookkeeping	94.68	Excellent	1.85
10 - Office Technology	93.01	Very Good	1.91
Grand Mean	**92.53**	**Very Good**	**2.03**

Legend: 65.00 – 74.99 Failure; 75.00 Passing; 76.00 – 81.99 Good; 82.00 – 87.99 Good; 88.00 – 93.99 Very Good; 94.00 – 100 Excellent

Table 2 shows the general weighted average grade of the junior high school students in the School Year 2021 – 2022. Overall, the students obtained a ***"very good"*** weighted average grade of 92.53. More specifically, Grade 10 students section *Bookkeeping* garnered the highest average grade of 94.68 which is an ***"excellent"*** grade. On the other hand, Grade 8 section *Sincerity* obtained the least grade average grade of 90.01. Most of the students (10 out of 12 sections) obtained a ***"very good"*** weighted average grade. It is also observed that lower variability in the scores were assigned by the respondents (SD = 2.03).

Table 3: Relationship between the challenges encountered by the students in online learning and their academic performance

Independent Variables (Challenges)	Dependent Variables	Pearson r- value	Interpretation	p-value	Remarks
Self-Regulation Challenges (SRC)	GWA grades	0.03	Weak correlation	0.2454	Not significant
Technological Literacy and Competency Challenges(TLCC)	GWA grades	0.02	Weak correlation	0.1412	Not significant
Student Isolation Challenges (SIC)	GWA grades	0.82	Strong correlation	0.0035	Significant
Technological Sufficiency Challenges (TSC)	GWA grades	0.04	Weak correlation	0.2715	Not significant
Technological Complexity Challenges (TCC)	GWA grades	0.02	Weak correlation	0.3421	Not significant
Learning Resources Challenges (LRC)	GWA grades	0.07	Weak correlation	0.1203	Not significant
Learning Environment Challenges (LEC)	GWA grades	0.74	Strong correlation	0.0021	Significant
Overall Correlation Value		**0.25**	**Weak correlation**		

Legend: 0 – No Correlation; ±0.01 – ± 0.33 – Weak Correlation; ±0.34 – ±0.66 – Moderate Correlation; ±0.67 – ±0.99 – Strong Correlation; ±1.00 – Perfect Correlation. Significant when p-value ≤ 0.05, otherwise not significant.

Table 3 shows correlation between the challenges encountered by the junior high school students and their academic performance. Overall, there is a weak correlation between challenges encountered by the junior high school students and their academic performance($r = 0.25$). More specifically, there is a strong correlation between the Student Isolation Challenges (r = 0.82) and Learning Resource Challenges (r = 0.74) encountered by the students and academic performance. Most of the paired variables (5 out of 7) have a weak correlation.

It is observed that the Self-regulation, Technological Literacy and Competency, Technological Sufficiency, Technological Complexity, and Learning Resources Challenges were not significantly related to students' academic performance. However, the Student Isolation and Learning Environment Challenges of junior high school students showed a significant relationship to their academic performance.

DISCUSSIONS

The current study investigates the challenges junior high school students faced in online learning during the Covid-19 pandemic and how these challenges impacted their academic performance. The findings reveal that students encountered a broad range of difficulties, with student isolation emerging as the most significant challenge, while technical literacy and proficiency were relatively less problematic. This aligns with previous research that underscores the exacerbation of existing online learning difficulties due to the pandemic. For instance, Gonzales et al. (2020) and Kapasia et al. (2020) highlighted the intensified challenges in online learning caused by movement restrictions and health protocols. The present study's results echo these findings, revealing that the pandemic's unique circumstances, including restricted mobility, limited access to resources, and heightened psychological stress, severely impacted the learning experience.

In comparing these results with previous research, the study confirms and extends earlier findings by Ozudogru (2021), Barrot (2021), and O'Doherty (2018), who documented various instructional, socioeconomic, technological, and psychosocial challenges faced by students. For instance, while Rasheed et al. (2022) identified technology use and competency as prevalent issues, the current study emphasizes that student isolation and the learning environment were more pressing challenges in the context of the pandemic. This divergence highlights the distinct impact of the pandemic on online learning experiences, particularly in developing countries where infrastructure and resources may be more limited.

The findings contribute to the broader understanding of online learning challenges by revealing how these challenges specifically affected junior high school students' academic performance during the pandemic. The study underscores that, beyond technological and instructional issues, the quality of

learning experiences, mental health, and socio-economic factors played crucial roles in shaping students' academic outcomes. By examining the interactions between these factors and their influence on academic performance, the study advances previous research and provides a nuanced perspective on the complexities of online learning in a pandemic context.

Overall, the study highlights that while technological and instructional challenges are significant, the impact of student isolation and the learning environment requires further attention. The current findings suggest that addressing these challenges—through improved resources, better support systems, and more effective online learning strategies—can enhance the educational experience and outcomes for students facing similar disruptions in the future.

CONCLUSIONS AND RECOMMENDATIONS

This study revealed several key challenges encountered by junior high school students during the Covid-19 pandemic and examined their correlation with academic performance. The findings indicate that student isolation and learning environment challenges were the most significant issues, with a strong correlation to the academic performance of the respondents. These results suggest that the emotional and physical environments in which students learn are critical factors influencing their academic success. In contrast, other challenges—such as self-regulation, technological literacy and competency, technological sufficiency, technological complexity, and learning resource challenges—did not show a significant relationship with academic performance. This may be due to various factors, including differences in individual student resilience, the support provided by schools, or the availability of resources. The study's findings highlight the importance of addressing the social and environmental aspects of online learning. Therefore, it is recommended that school administrators develop a series of webinars and seminars to equip students with strategies to manage these challenges. Additionally, parents should be offered workshops to learn effective techniques for supporting their children's education at home. Teachers are also advised to closely monitor their students' progress to provide timely interventions when necessary. These steps could help mitigate the impact of these challenges and support students in achieving better academic outcomes.

AUTHOR'S CONTRIBUTION:

BQC developed the research concept, carefully planned and designed the study, analyzed and interpreted the findings, and took the lead in writing the manuscript. NPB contributed to refining the research design, assisting with data analysis, providing insights during result interpretation, and reviewing and editing the manuscript.

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