

## The impact of online classes on students' learning behavior during COVID-19

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### Abstract

The COVID-19 pandemic has posed significant global challenges, adversely affecting various aspects of human life, including education. This study aimed to analyze students' problematic behaviors in the new learning modality to mitigate the risks of academic failure. Specifically, it examined the impact of online classes on the learning behaviors of 100 students during the COVID-19 pandemic. In the first semester of the academic year 2022–2023, the study employed a mixed-methods approach, combining qualitative and quantitative research. The researchers disseminated a questionnaire based on Nouri (2021) and interviewed ten respondents to gain deeper insights. The findings revealed that the pandemic had an unexpected and profound impact on students' ability to adapt to new educational modes, compounded by financial difficulties and technological demands. The study underscored critical areas for educators to address to promote effective learning. Notably, the qualitative data highlighted that some students faced significant challenges due to extremely slow internet speeds in their areas, which severely hindered their engagement with online learning. The originality of this study lies in its focus on academic institutions during a critical period, providing insights into how pandemic-induced disruptions shaped the educational experience. This offers valuable implications for educators, policymakers, and institutions to enhance remote learning strategies and support students in future educational crises.

**Keywords:** COVID-19 pandemic, learning behavior, online class

## INTRODUCTION

Due to the COVID-19 pandemic, schools were forced to suspend face-to-face classes and shift to online modes of instruction. Despite the unprecedented challenges, educators swiftly adopted digital tools and platforms to sustain learning, giving rise to what has become known as the "new normal" in education. This transition significantly altered students' learning environments and required them to adapt rapidly to online education. As a result, changes in students' learning behaviors and engagement patterns emerged as pressing concerns during the widespread implementation of online classes.

Online classes are defined as "learning experiences in synchronous or asynchronous environments that utilize various devices with internet access. In these settings, students can learn and interact with instructors and fellow students from any location" ([Dhawan, 2020](#)). This form of education, driven by advances in information technology, has created a dynamic and flexible platform for teaching and learning ([Moore et al., 2011](#)). Unlike traditional classroom settings, online classes offer immediate and consistent access to teachers and peers, though not without certain limitations ([Kokemuller, 2020](#)).

Learning behavior refers to how individuals acquire knowledge and skills through interacting with their environment. In online education, students' engagement is significantly shaped by digital tools and the structure of virtual learning environments ([Suryatiningsih et al., 2021](#)). According to [Ajzen & Fishbein \(2005\)](#), general attitudes may not predict specific behaviors, but attitudes toward particular actions, such as participation in online classes, can provide insight into behavioral outcomes. Positive learning behaviors are essential for students to engage with content and make academic progress effectively.

While online learning has now been in place for over two years, many studies report a growing sense of fatigue, boredom, and behavioral challenges among students. [Irawan et al., \(2020\)](#) found that students experienced psychological issues such as anxiety, mood swings, and a lack of motivation, often linked to financial stress and heavy workloads. Similarly, [Suryatiningsih et al. \(2021\)](#) observed that online learning during the pandemic presented greater challenges than traditional classroom learning, resulting in disengagement and learning difficulties.

Despite being digital natives, many students struggled to adapt fully to online education. [Mediawire \(2020\)](#) noted a decline in classroom participation and engagement during virtual learning sessions. The lack of direct interaction with teachers and peers contributed to reduced motivation, weakened discipline, and growing academic challenges. [Shah et al. \(2021\)](#) emphasized that students' behavior became more difficult to manage in online settings, particularly as they adjusted to the shift from physical classrooms. As highlighted by [Mallillin & Laurel \(2021\)](#), motivation remains critical in shaping students' learning behavior and academic success in online contexts.

Numerous studies have emphasized the role of demographic factors, particularly socioeconomic status, in shaping online learning access and outcomes. During the pandemic, disparities in internet access, device availability, and digital skills became more evident, especially among students from low-income households ([Adedoyin & Soykan, 2023](#); [Dhawan, 2020](#)). These inequalities limited students' access to education and impacted their learning behavior, participation, and performance.

While previous research has explored the general challenges of online learning, there remains a gap in understanding how students' socioeconomic backgrounds, especially their family income, specifically influence their perceptions, behaviors, and overall experiences in online classes. Furthermore, most studies tend to focus on quantitative outcomes, with

limited exploration of students' personal, lived experiences during this period of educational disruption. This study addresses this gap by combining quantitative and qualitative data to better understand the behavioral and perceptual impact of online learning during the pandemic, particularly for students from varying economic backgrounds.

Motivated by these observations, the study investigates how online classes during the COVID-19 pandemic influenced students' learning behavior. Specifically, it explores students' perceptions of teacher instruction, their learning engagement, and the broader effects of the online learning environment. The research aimed to answer the following questions:

1. What is the family income profile of students enrolled in online classes during the COVID-19 pandemic?
2. What are students' perceptions of their online classes regarding teacher instruction and their learning?
3. What are students' perceptions of the impact of online classes on their learning and behavior?
4. What are students' lived experiences with online learning during the COVID-19 pandemic?

This study assesses students' challenges and perceptions in adapting to online learning, particularly how socioeconomic status may influence their experiences and learning behaviors.

## RESEARCH METHOD

The research design employed in this study was a mixed-methods approach to collect both quantitative and qualitative data. The researchers analyzed numerical figures with quantitative data and collected narratives from interviews using qualitative data to gain insights from the respondents. Data was gathered through questionnaires and interviews. The study occurred at a Philippine College of Education, where students engaged in online classes as their learning modality.

The respondents are students enrolled in the Bachelor of Elementary Education program during the first semester of the 2022-2023 academic year. They experienced and utilized online classes as their learning modality. A total of one hundred (100) students completed the questionnaires, and ten (10) students were subsequently selected for in-depth interviews. The researchers employed a purposive sampling technique to choose the respondents, specifically targeting those who participated in online classes during the pandemic for this study.

Researchers used an adapted questionnaire from [Noori \(2021\)](#) with two main sections. The first section had two subparts: Teaching and Learning. The second section also included two sub-parts that explored the impact of online classes on students' learning and behavior. The researchers conducted a semi-structured interview questionnaire, adapted from [Noori \(2021\)](#), with 10 selected Bachelor of Elementary Education students. The interview questions included: "What are your learning experiences during online classes?", "What challenges have you encountered during online classes?", and "What impacts do online classes have on your learning and behavior?" Moreover, the interview sessions were audio recorded for accuracy and later transcribed.

The data in this study were analyzed using both quantitative and qualitative methods to adhere to the mixed-methods research design. Quantitative data from the survey questionnaires were processed with descriptive statistical tools, particularly frequency, percentage distribution, and mean. These tools summarized students' family income and quantified student responses on Likert-scale items regarding their perceptions and

experiences with online learning. Frequency and percentage distribution provided an overview of how many respondents selected each response option, while the mean calculated the overall trend or average level of agreement with each statement. Conversely, qualitative data obtained from semi-structured interviews underwent thematic analysis. This process included transcribing the interviews, coding significant responses, and identifying recurring patterns or themes that illustrated students' attitudes, challenges, and insights regarding online learning. Through this dual analysis, the study offered both statistical generalizations and a nuanced understanding of the respondents' experiences, thereby enhancing the validity and richness of the findings.

## FINDINGS AND DISCUSSION

This section outlines the study's key findings and is organized around the main research questions. The first research question analyzes the demographic profile of the respondents, focusing specifically on their family income during the COVID-19 pandemic. Next, the study examines students' experiences with online learning, including their views on teacher instruction and their learning processes, based on survey descriptive statistics. Additionally, the data emphasize students' perceptions of how online classes affected various aspects of their learning and behavior during the pandemic. Lastly, the findings explore the respondents' experiences with online learning, providing deeper qualitative insights into students' challenges and adaptations during this period. These results offer a thorough understanding of online education's academic and personal impact amid the COVID-19 crisis.

### Respondents' Family Income

This section presents the study's results, organized according to the research problems outlined in the introduction. The first research question explores respondents' family income. Understanding these characteristics is crucial, as they can affect students' access to resources, engagement in online learning, and overall academic performance, especially during the COVID-19 pandemic.

**Table 1.** Frequency and Distribution of the Respondents' Family Income

Family Income	Frequency	Percent
Low average	65	65.0
Average	34	34.0
High average	1	1.0
Total	100	100.0

The discussion combines quantitative results with relevant literature to enhance the understanding of respondents' experiences. Special emphasis is placed on family income, a crucial factor that affects students' access to digital technologies and stable internet connections, influencing their ability to engage in and benefit from online education.

The data in Table 1 indicate that 65% of the respondents belong to the low-average income bracket, 34% belong to the average income bracket, and only 1% belong to the high-average income bracket. This suggests that most participants come from low- to average-income families.

This finding aligns with previous research emphasizing socioeconomic status's significant role in online learning environments. Studies by Adedoyin and Soykan (2020) and Dhawan (2020) demonstrate that students from lower-income backgrounds often face challenges related to limited access to technological resources and reliable internet connections. These challenges can negatively affect their learning experiences, academic performance, and overall engagement with online education.

Furthermore, research on the digital divide, notably by [Van Deursen & Van Dijk \(2019\)](#) emphasizes that lower-income families are disproportionately affected by inadequate access to digital tools, which is crucial for navigating online learning platforms. This digital inequality hinders immediate academic success and may contribute to longer-term educational disparities.

This study's predominance of low-average-income students underlines the necessity for educational institutions and policymakers to implement targeted support measures. By addressing these students' technological and financial barriers, stakeholders can help mitigate the negative impacts on learning outcomes and ensure more equitable access to quality education during and beyond the pandemic.

In summary, the socioeconomic profile of the respondents' mirrors trends observed in related studies, reinforcing the call for enhanced resources and support systems to assist low-income students in overcoming the unique challenges posed by online learning.

### The Perception of the Respondents about their Online Class

This section shows the survey descriptive statistics of students' experiences of teacher teaching and students' learning in online classes during the COVID-19 pandemic. The foregoing tables describe each of these variables.

**Table 2.** The Perception of the Respondents About their Online Class in terms of the Teacher's Teaching

Indicators			Mean	Rank	Qualitative Description
1. My lecturers were teaching effectively during online classes.			2.99	1	Agree
2. I had contact with my lecturers through online platforms.			2.81	4	Agree
3. I received constructive feedback from my lecturers.			2.83	3	Agree
4. I received support from my teachers.			2.86	2	Agree
<b>Overall Mean</b>			2.87		<b>Agree</b>
<b>Scale:</b>	3.25 – 4.00	Strongly Agree	1.75 – 2.49	Disagree	
	2.50 – 3.24	Agree	1.00 – 1.74	Strongly Disagree	

In this part, the respondents are asked about their perception of online classes in terms of teacher teaching. The data revealed that their professors could adapt quickly and effectively to the shift to online learning. Thus, it only implies that their professors were not factors contributing to the students' problem behavior. This is reflected in the students' solicited responses to the survey.

The result of this study shows that students agreed with the above indicators. It means that the teaching strategies of their professor do not affect them. This means that their professors were active and paying attention to the requests and concerns of their students, as they can be reached via media platforms during the online classes. Thus, learning behavior lies only in the students.

This is substantiated by the study of [Howland & Moore \(2002\)](#), which revealed that student characteristics influence how online learners learn. The findings were supported by the studies by [Zhang et al. \(2020\)](#), [Lapitan et al. \(2021\)](#), and [König et al. \(2020\)](#), who found

that online teaching is effective when all students have equal access to facilities and lectures. However, this contradicts the findings of [Noori \(2021\)](#), who found that respondents disagreed and strongly disagreed with the statements, indicating that they did not experience constant access to online teaching during the COVID-19 pandemic in Afghanistan.

**Table 3.** The Perception of the Respondents about their online class in terms of Students' Learning

Indicators	Mean	Rank	Qualitative Descriptive
1. I had access to online classes during the COVID-19 pandemic.	3.11	2	Agree
2. I had an Internet facility during online classes.	2.75	7.5	Agree
3. I had a technology facility during an online class.	2.75	7.5	Agree
4. I used different resources during the online class.	2.81	4.5	Agree
5. I had better knowledge of using technology.	2.76	6	Agree
6. I had contact with my classmates through online platforms.	3.20	1	Agree
7. I worked with my group mates and classmates.	2.96	3	Agree
8. I was receiving feedback from my peers.	2.72	9	Agree
9. My peers supported me in online classes during the pandemic.	2.81	4.5	Agree
<b>Overall Mean</b>	<b>2.87</b>		<b>Agree</b>
<b>Scale:</b>	3.25 – 4.00	Strongly Agree	1.75 – 2.49 Disagree
	2.50 – 3.24	Agree	1.00 – 1.74 Strongly Disagree

Table 3 presents the mean, rank, and qualitative description of respondents' perceptions of the impact of online classes on students' learning. The respondents "agree" that they had access to online courses during the COVID-19 pandemic, had Internet facilities during online classes, had technology facilities during online courses, had better knowledge of using technology, and used different resources during online classes. Students agreed that there is no problem with using technology during the online class. Students' abilities and skills in using technology are one way to enhance their learning and knowledge. Students remain resourceful, collaborative, participative, and responsible during the online. This only means that the student's learning is somehow unaffected because they continue to learn despite the many problems they experienced during the online classes. Also, the respondents "agree" that they had contact with their classmates through online platforms, that they worked with their group mates and classmates, that they received feedback from their peers, and that they received feedback from their peers.

The overall mean is 2.87, with a qualitative description of 'agree.' This means that most of the respondents agreed to the above indicators. The findings were supported by the studies by [Zhang et al. \(2020\)](#), [Shahzad et al. \(2020\)](#), [Lapitan et al. \(2021\)](#), and [König et al. \(2020\)](#) who found that students were satisfied with online learning because it was adequate for them during the COVID-19 pandemic. Research shows that online teaching and learning are effective when all students can access facilities and lectures. However, this contradicts the study of Noori (2021), who found that respondents disagreed and indicated that they did not experience constant access to online teaching and learning during the COVID-19 pandemic in Afghanistan.

### Respondents' Perception of the Impact of Online Class



This section shows the survey descriptive statistics of students' perceptions of the impact of online classes during the COVID-19 pandemic on different aspects of students' learning and behavior. It utilizes a 4-point Likert scale with a description: 4 strongly agree, 3 agree, 2 disagree, and 1 strongly disagree. The findings are illustrated below.

**Table 4.** Perception of the Respondents on the Impact of Online Class in terms of Students' Learning

Indicators	Mean	Rank	Qualitative Description
1. Online Classes impacted my learning behavior.	3.16	2.5	Agree
2. Online Classes impacted my subject knowledge.	3.13	4	Agree
3. Online Classes impacted the quality of my learning.	3.22	1	Agree
4. Online Classes impacted my class assignments and tasks.	3.16	2.5	Agree
<b>Overall Mean</b>	<b>3.17</b>		<b>Agree</b>
<b>Scale:</b> 3.25 – 4.00 Strongly Agree	1.75 – 2.49	Disagree	
2.50 – 3.24 Agree	1.00 – 1.74	Strongly Disagree	

Table 4 presents the mean, rank, and qualitative description of the respondents' perception of the impact of online classes on students' learning. The respondents "agree" that online class impacted their learning behavior ( $x = 3.16$  and rank 2.5), that online class impacted their subject knowledge ( $x = 3.13$  and rank 4), that online classes affected the quality of their learning ( $x = 3.22$  and rank 1), and that online class impacted their class assignments and tasks (3.16 and rank 2.5).

Table 5 below presents the mean, rank, and qualitative description of the respondents' perception of the impact of online classes on students' behavior. It can be seen that the respondents "agree" that due to the online class, they feel that they did not study for years ( $x = 2.93$  and rank 5); that they feel they lost educational opportunities during online class ( $x = 3.02$  and rank 4); that online class impacted them psychologically ( $x = 3.05$  and rank 3); that online class impacted them spiritually ( $x = 3.11$  and rank 2); and online class impacted their motivation for learning ( $x = 3.17$  and rank 1).

**Table 5.** Perception of the Respondents on the Impact of Online Class in terms of Students' Behavior

Indicators	Mean	Rank	Qualitative Description
1. I did not study for years due to the online classes.	2.93	5	Agree
2. I feel I lost educational opportunities during online classes.	3.02	4	Agree
3. Online classes impacted me psychologically.	3.05	3	Agree
4. Online classes impacted me spiritually.	3.11	2	Agree
5. Online classes impacted my motivation for learning.	3.17	1	Agree
<b>Overall Mean</b>	<b>3.06</b>		<b>Agree</b>
<b>Scale:</b> 3.25 – 4.00 Strongly Agree	1.75 – 2.49	Disagree	
2.50 – 3.24 Agree	1.00 – 1.74	Strongly Disagree	

Furthermore, Data revealed that the students' perceptions of the Impact of Online Classes on their learning and behavior, with all having a p-value of 0.000, are significant and correlate with students' perceptions of teacher teaching and students' learning. Hence, the hypothesis for this is rejected.

It is similar to the study of [Hamdan & Amorri \(2020\)](#), which found that teaching and learning are significant at 95% ( $p < 0.000$ ), and there is a strong correlation between 95.8% of the learning skills and students' performance. They also discovered that the teacher's teaching significantly impacts students' learning.

### **Respondents' lived experiences regarding online learning during the COVID-19 pandemic.**

The study revealed that positive adaptations and significant struggles shaped students' experiences during online learning. Two main themes emerged from their learning experiences: gaining digital skills and facing challenges adapting to the new learning setup. Some students learned to use tools like Google Classroom and became more creative with tasks such as video reporting. For instance, Respondent 1 shared, *"My learning experiences were submitting tasks in Google Classroom, interacting with my classmates and teacher through Messenger, and making video reports and demonstrations."* However, many students struggled adjusting to online education, citing poor internet connectivity, outdated gadgets, and difficulty understanding lessons due to limited teacher interaction. Respondent 5 described the experience as *"like a typhoon... it destroyed my opportunity to learn properly."*

When discussing challenges, five themes were identified: unstable internet connection, financial difficulties, overwhelming academic workload, lack of adequate technology, and limited communication with teachers. Unstable internet was the most frequently mentioned issue. For example, Respondent 4 noted, *"The internet connection was unstable... I could not join classes or catch up, making online learning useless."* Financial challenges also played a significant role, especially for students needing to buy mobile data, as highlighted by Respondent 8, *"Since my parents do not earn much, I struggle to find money for load."* Endless tasks contributed to a loss of motivation, with Respondent 1 stating, *"There were so many tasks and activities, I had a hard time complying on time."* One respondent also reported *using outdated gadgets*, and another mentioned *being ignored by teachers when trying to reach out*, reflecting technological and communication gaps that hindered engagement and learning.

As for the impact of online learning, responses were divided into two main categories: positive outcomes like becoming independent learners, and adverse effects such as decreased motivation, procrastination, and mental stress. Some students noted improvement in digital literacy and self-directed learning. For example, Respondent 6 remarked, *"I do not need to depend on my teachers... I comprehend the material myself."* However, a greater number shared adverse effects. Respondent 7 reflected, *"It felt like I did not learn anything... I lost my motivation because no teacher was present and no one was watching over me."* Others described feelings of stress, isolation, and even depression, as stated by Respondent 3, *"The negative impact was depression because I felt left behind due to struggles."*

These findings align with Mezirow's Transformative Learning Theory, which emphasizes that learning occurs through adapting to disorienting experiences and developing new perspectives. While online learning prompted some transformation, it also exposed systemic inequalities and emotional burdens that deeply affected students' educational experiences.



## CONCLUSIONS

This study examined the experiences of Bachelor of Elementary Education students with online learning during the COVID-19 pandemic, emphasizing how socioeconomic status, perceptions of teaching and learning, and personal challenges influenced their academic outcomes. The findings revealed that while most respondents valued their teachers' efforts and adapted to online tools, most, especially those from low-income families, encountered significant barriers such as poor internet connectivity, limited access to technology, and overwhelming workloads. These challenges affected their academic performance and contributed to their emotional well-being. Stress, reduced motivation, and a sense of educational loss.

Despite these challenges, some students developed greater independence and digital literacy, demonstrating that online learning can be effective when sufficient support systems are implemented. However, the study's findings also confirm that socioeconomic disparities are a significant factor in students' success in digital learning environments.

The implications of this study emphasize the necessity for educational institutions and policymakers to tackle digital inequity by ensuring access to reliable internet and devices, particularly for low-income learners. Additionally, there is an important need to integrate mental health support and student-centered teaching practices that acknowledge the diverse realities learners encounter. By doing so, online education can become more inclusive, sustainable, and responsive—not only in times of crisis but also in the broader context of educational equity and transformation.

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