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Challenges Encountered by BSEd-Mathematics Students in the Implementation of Hybrid Learning in Gordon College

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A B S T R A C T

The study examines the challenges faced by Bachelor in Secondary Education Major in Mathematics students at Gordon College in implementing hybrid learning for the academic year 2022-2023. The research involved 73 students, primarily in their first year, and found that online students face difficulties with math symbol encoding, connectivity, time management, and financial constraints. Onsite students face learning gaps, commuting and access issues, and require additional financial support. The study found no significant difference in challenges based on profile-variables in online mode, but differences exist based on year level and municipality. Recommendations include enhanced technical support, online tool training, time and stress management programs, financial assistance for low-income students, and improved accessibility in onsite mode.

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INTRODUCTION

In recent years, the learning system has undergone a major transformation, especially with the implementation of hybrid learning methods. At Gordon College, the Bachelor of Secondary Education (BSEd) program majoring in Mathematics also adopts this method to accommodate educational needs in the digital era. However, the implementation of hybrid learning is inseparable from significant challenges, especially for students. This research aims to identify and analyze the challenges faced by BSEd-Mathematics students in undergoing hybrid learning. By understanding the obstacles that arise, it is hoped that these findings can help in formulating more effective strategies to improve the quality and effectiveness of hybrid learning in the future.

Flexible learning, a pedagogical approach that has been a part of the educational landscape in the Philippines for some time, underwent a significant transformation in response to the global COVID-19 pandemic. As early as 2020, it was evident that this unprecedented crisis would reshape the way education was delivered and received in the country and around the world.

In the Philippines, flexible learning was not an entirely novel concept. Publico (2020) noted that some schools had already integrated elements of flexible learning into their curricula before the pandemic hit. Moreover, select educational institutions had proactively adopted a blended learning approach, combining online and face-to-face classes, recognizing the potential benefits of such a flexible model.

However, the arrival of COVID-19 on Philippine shores, first reported to the World Health Organization (WHO) on December 21, 2019, brought forth a series of challenges that demanded innovative solutions. The WHO swiftly declared the COVID-19 outbreak a global health emergency on January 30, 2020, and, by March 11, 2020, the situation had escalated to a global pandemic. The Philippine government, like many others worldwide, had to make the difficult decision to suspend all public and private schools, thrusting educators, students, and parents into uncharted territory.

In response to this educational crisis, many universities and colleges under the purview of the Commission on Higher Education (CHED) in the Philippines swiftly adopted flexible learning systems. Chu et al. (2022) outlined three distinct learning modes that emerged during this transition. First, the online mode leveraged available online platforms for instruction delivery, allowing students to access educational content remotely. Second, the offline mode involved the distribution of printed modules or digital media stored on devices, catering to those with limited internet access. Lastly, the blended mode, a hybrid approach, seamlessly combined both online and offline modalities, offering students greater flexibility and accessibility.

However, as the number of active COVID-19 cases in the Philippines has gradually declined, the educational landscape has once again shifted. Responding to this evolving situation, the Commission on Higher Education (CHED) introduced significant policy changes. On November 11th, CHED released Memorandum Order CMO no. 16 series of 2022, signaling a pivotal

moment for higher education institutions (HEIs). This directive grants HEIs the discretion to choose between two modes of education delivery: onsite learning or flexible learning, starting from the second semester of the School Year 2022-2023.

This directive marks a crucial development in the realm of Philippine education. It acknowledges the necessity of providing options that cater to the diverse needs and circumstances of students and institutions alike. No longer bound to a one-size-fits-all approach, HEIs must now navigate a path forward that is both comprehensive and adaptable in response to these changes.

Despite the commendable efforts to ensure continuity in education, students have encountered a multitude of challenges during the implementation of flexible learning. These difficulties span content-related issues, social obstacles, and policy-related concerns (Akrofi et al., 2020). Furthermore, tertiary institutions have grappled with challenges in the realms of technology, society, and education (Fashoto et al., 2021). Some students have found flexible learning daunting due to a lack of motivation and the heavy demands of their responsibilities (Bundalian et al., 2022). Furthermore, the financial burden of securing a stable network for online classes has presented challenges for numerous families.

In light of these transformations and challenges, this study seeks to gain comprehensive insights into the unique hurdles faced by Bachelor of Secondary Education Major in Mathematics students at Gordon College during the academic year 2022-2023. Understanding these challenges is crucial for informing strategies to enhance the quality and effectiveness of flexible learning in the evolving educational landscape.

CONCEPTUAL FRAMEWORK

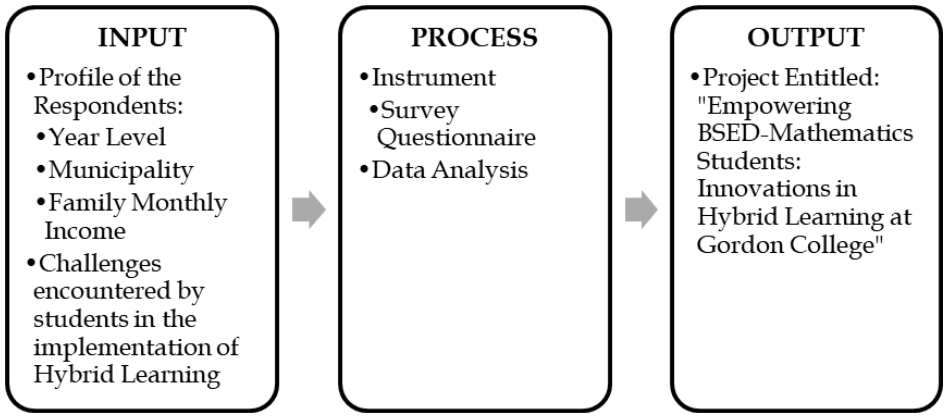

Figure 1. Conceptual Framework

The conceptual framework for the action research, titled "Challenges Encountered by BSED-Mathematics Students in the Implementation of Hybrid Learning at Gordon College," serves as the guiding structure for this research endeavour. It encompasses a comprehensive understanding of the research's scope, information sources, and envisioned outcomes.

THEORITICAL REVIEW

Profile of Respondents

Another crucial dimension of the conceptual framework involves a thorough examination of the profile of the BSED-Mathematics students at Gordon College who are the focus of this research. This dimension delves into demographic details, educational backgrounds, and personal circumstances. Understanding the diversity within this student group helps contextualize the challenges they face and tailor interventions accordingly.

Identification of Challenges

The first pillar of this framework builds upon prior research efforts by scholars such as Almarashdi and Jarrah (2021) and Hernandez (2021). These studies have identified common challenges faced by students in the context of hybrid learning, which may include limited access to resources, difficulties in self-regulated learning, and issues related to the digital divide.

Expected Output

At the core of the conceptual framework lies the desired outcome of the research: the empowerment of BSED-Mathematics students. The anticipated outputs include:

a. Technological Support. Providing necessary technological support to ensure students have access to online resources, software, and hardware essential for hybrid learning.
b. Time Management Support. Offering strategies and tools to help students effectively manage their time, balance academic responsibilities with other commitments, and maintain a structured learning routine.
c. Improved Communication Channels. Enhancing communication between students, faculty, and support services through effective virtual communication tools and strategies.
d. Adaptive Strategies. Adapting interventions based on specific challenges identified through data analysis, ensuring a tailored approach to address the unique needs of BSED-Mathematics students at Gordon College.

By incorporating these elements into the conceptual framework, the action research aims to illuminate the challenges faced by BSED-Mathematics students in the context of hybrid learning and develop targeted solutions to empower them. The ultimate goal is to enhance the overall learning experience and outcomes for these students at Gordon College.

METHODOLOGY

Research Design

To systematically conduct the research study and to gather the data and information, the study utilized descriptive cross-sectional design.

Cross-sectional studies are characterized by the collection of relevant information (data) at a given point in time. Cross-sectional studies may be either descriptive or analytical. Descriptive studies mostly aim to provide

estimates of prevalence of disease, traits such as smoking behavior, people's attitudes, knowledge, or health behavior, whereas analytical studies aim to assess associations between different parameters (Kesmodel, 2018).

The descriptive cross-sectional was used in the study since the aim was to relevant problems that the BSED-Mathematics Students of Gordon College encounter in the implementation of the Hybrid Learning the result of this study would serve as the basis for the formulation of program development for enhancing the mathematics learning outcome of the students in Gordon College.

Population and Sample

The population of this study were the students from first year to fourth year who were studying Bachelor of Secondary Education Major in Mathematics. The respondents were from the Academic Year 2022-2023 of Gordon College. There were total of 73 students, 25 students from 1st year, 18 students from 2nd year, 15 students from 3rd year and 15 students from 4th year as the population.

Research Instrument

The research instrument of this study was a survey questionnaire which was composed of the different references and other studies that were aligned to the objective of this study. The statements in this questionnaire are adapted by the researcher from studies conducted by Almarashdi and Jarrah (2021) entitled "Mathematics Distance Learning amid the COVID-19 Pandemic in the UAE: High School Students' Perspectives" and Hernandez (2021) entitled "Strengths and Challenges of Distance Learning Modalities in the New Normal: Basis for Intervention Program".

Statistical Treatment

The data gathered were organized and processed through the Statistical Package for Social Sciences Version 23 (SPSS). As one of the rules followed in the use of the software, the formula of statistical tools used was not reflected anymore since the computer did not follow the steps in the manual computation. The following statistical techniques were applied to treat the specific problems raised in the study:

1. **Frequency and Percentage Distribution.** It is used to describe the profile of the respondents which includes their year level, city/municipality, and family monthly income.
2. **Weighted Mean and Descriptive Rating.** It is used to determine the Challenges encountered by the respondents in the implementation of Hybrid Learning in terms of Online and Onsite Modality.
3. **Shapiro-Wilk Test.** It was used to test the normality of the data gathered. This normality test is required to determine the appropriate statistical tool to be used to analyze the data. If the Sig. value of the Shapiro-Wilk Test is

greater than 0.05, the data is normal. If it is below 0.05, the data significantly deviate from a normal distribution.

4. **Analysis of Variance (ANOVA).** It was used to determine the significant difference on the challenges encountered by the respondents in the implementation of hybrid learning when grouped according to their profile-variables.

RESULTS AND DISCUSSION

This section encompasses the data presentation employed in the study, as well as the analysis and interpretation of the data conducted by the researcher, with the assistance of relevant literature and previous studies. The data were systematically arranged in a specific order following the statement of the problem.

Profile of the Respondents

The tables below shows the distribution of the respondents with regards to their profile. The profile is consist of the year level, city/municipality, and family monthly income of the respondents.

Table 1
Distribution on Profile of the Respondents in Terms of Year Level

Year Level	Frequency	Percent
First year	25	34.2
Second year	18	24.7
Third year	15	20.5
Fourth year	15	20.5
Total	**73**	**100**

Year Level. The table represents the distribution of students across different year levels.

The research findings reveal valuable insights into the composition of the student population in each academic year. The highest number of students can be found in the 1st year, with a frequency of 25 students, accounting for 34.2% of the total student body. This indicates a significant influx of students at the beginning of their academic journey. In the 2nd year, there are 18 students, representing 24.7% of the total. This suggests a decrease in student numbers compared to the 1st year, potentially due to various factors such as attrition, program selection, or transfer to other institutions. The 3rd and 4th years have an equal frequency of 15 students each, contributing to 20.5% of the total student population. This parity in student enrolment between the 3rd and 4th years suggests a consistent cohort progression, where a portion of students successfully advance through each year.

According to Engelbrecht and Harding (2003), students no longer seek just to increase their knowledge of a subject of their choice; they demand rather to be prepared for the job market. Unfortunately, mathematics is not seen as a

career option. Teaching as a profession for mathematically talented students no longer seems to be as attractive an option as it once was.

Table 2
Distribution on Profile of the Respondents in Terms of City/Municipality

City/Municipality	Frequency	Percent
Olongapo City	59	80.8
Subic	1	1.4
Castillejos	3	4.1
San Marcelino	10	13.7
Total	**73**	**100**

City/Municipality. The table shows the distribution of BSEd-Math students in terms of their City or Municipality at present.

Among the municipalities considered, Olongapo City stands out with the highest number of BSEd-Math students studying at Gordon College. With a frequency of 59 students, they make up a significant portion of 80.8% of the total. This indicates that a large majority of BSEd-Math students at Gordon College came from Olongapo City. In contrast, Subic has the lowest representation among the municipalities, with only one student enrolled, accounting for a mere 1.4% of the total. This suggests that Subic has a very small number of BSED Math students studying at Gordon College compared to the other municipalities.

Castillejos, with a frequency of three students, represents 4.1% of the total. While this percentage is still relatively small, it indicates that Castillejos contributes a slightly higher number of BSEd-Math students compared to Subic. San Marcelino, with a frequency of ten students, accounts for 13.7% of the total student population. This signifies a notable presence of BSEd-Math students from San Marcelino, although it is still lower than Olongapo City.

These findings shows that most of the students of Gordon College are residing close proximity of the campus itself. However, there is also a percentage of students who are residing in San Marcelino, which is far more than the municipalities of Castillejos and Subic.

In accordance with Wozniak (2018), geographic location is an important factor in determining not just where, but whether, a high school senior goes on to college. For those who live far from a higher-education institution, the costs of moving across state or county lines are large, and often go far beyond direct travel or start-up adjustment costs. System enrolment from other high schools was essentially unchanged. This suggests that for some students, the presence of a local college is key to their attendance.

Table 3
Distribution on Profile of the Respondents in Terms of Family Monthly Income

Family Monthly Income	Frequency	Percent

Less than Php 5,000	9	12.3
Php 5,001- 10,000	26	35.6
Php 10,001- 15,000	22	30.1
Above Php 15,000	16	21.9
Total	**73**	**100**

Family Monthly Income. The table shows the distribution of the respondents, in terms of their family monthly income.

Among the different income brackets, the category "Less than Php 5,000" comprises nine students, representing 12.3% of the total. This indicates that a small portion of BSED Math students at Gordon College come from families with a lower monthly income. The category "Php 5,001-10,000" has the highest frequency, with 26 students, accounting for 35.6% of the total. On the other hand, the category "Php 10,001-15,000" includes 22 students, representing 30.1% of the total. Lastly, the category "Above Php 15,000" consists of 16 students, making up 21.9% of the total.

This shows that majority of the students are in the middle-earning range. These findings highlight the diversity of BSED Math students at Gordon College in terms of their family monthly income. It demonstrates that students from various income brackets have embraced the opportunity to pursue their passion for mathematics education.

A study conducted by Khalid (2016) also shows that low and middle earner families prefer public colleges that offer free higher education. It is evident that college and university choices also depends on the socio-economic profile of an individual.

Challenges Encountered in Hybrid Learning

The tables presented consist of the results for the mean distribution of each statement for both online and onsite modality. Categories for both modalities is also presented namely: Attitude towards Learning, Accessibility, Student's Well-being, and Financial.

Table 4
Challenges Encountered by the Students in the Implementation of Hybrid Learning In terms of Online Modality

	Indicators	Mean	Verbal Interpretation
	Attitude towards Learning		
1.	I do not like to participate in math class because of the difficulty of encoding math symbols in a computer.	1.85	Quite Challenging
2.	I don't study for the mathematics exam and get answers to questions easily from others.	1.71	Not Challenging
Overall Mean		**1.78**	**Quite Challenging**

	Accessibility		
3.	I missed some important information due to connection problems or weak connectivity of the Internet.	2.90	Challenging
4.	I find it difficult to communicate with my instructors through online set-up	2.64	Challenging
5.	The institution has enough resources for teaching and learning to support online instruction.	2.88	Challenging
Overall Mean		**2.81**	**Challenging**
	Student's Well-being		
6.	I feel stressed and nervous due to my inability to work with computers and educational programs.	2.45	Quite Challenging
7.	Studying for long hours in front of a computer makes me tired.	3.18	Challenging
8.	Due to the multiple tasks, including house chores, I do not have enough time to complete all the required tasks per day for mathematics.	2.81	Challenging
Overall Mean		**2.81**	**Challenging**
	Financial		
9.	It is an additional expense to the family especially the internet load.	2.77	Challenging
10.	I have limited access to a device to utilize in an online class setting.	2.63	Challenging
Overall Mean		**2.70**	**Challenging**

Online Modality. The table provides insights into the challenges students face during the implementation of hybrid learning, specifically focusing on the online modality. These challenges are categorized into four indicators: Attitude towards Learning, Accessibility, Student's Well-being, and Financial.

Under the "Attitude towards Learning" indicator, students expressed disagreement (mean rating of 1.85) regarding the difficulty of encoding math symbols on a computer. They strongly disagreed (mean rating of 1.71) with the statement that they don't study for math exams and rely on others for answers. The overall mean rating for this indicator was 1.78, indicating disagreement.

In terms of "Accessibility," students agreed (mean rating of 2.90) that they missed important information due to connection problems or weak internet connectivity. They also agreed (mean rating of 2.64) that it was challenging to communicate with their instructors through the online setup. However, they agreed (mean rating of 2.88) that the institution had enough resources for teaching and learning to support online instruction. The overall mean rating for this indicator was 2.81, indicating agreement.

Regarding "Student's Well-being," students disagreed (mean rating of 2.45) with the statement that they feel stressed and nervous due to their

inability to work with computers and educational programs. However, they agreed (mean rating of 3.18) that studying for long hours in front of a computer made them tired. They also agreed (mean rating of 2.81) that due to multiple tasks, including house chores, they did not have enough time to complete all the required tasks per day for mathematics. The overall mean rating for this indicator was 2.81, indicating agreement.

In terms of the "Financial" aspect, students agreed (mean rating of 2.77) that hybrid learning posed an additional expense to their families, especially regarding the cost of internet load. They also agreed (mean rating of 2.63) that they had limited access to a device for online class settings. The overall mean rating for this indicator was 2.70, indicating agreement.

The challenges faced by students in the online modality received an overall mean rating of 2.53, indicating agreement. This suggests that students generally encounter challenges and difficulties across various aspects of hybrid learning.

Table 5
Challenges Encountered by the Students in the Implementation of Hybrid Learning In terms of Onsite Modality

	Indicators	Mean	Verbal Interpretation
	Attitude towards Learning		
1.	The learning gap is still present after the pandemic.	3.03	Challenging
2.	In face to face set up I only relied on materials presented by my instructor for my learning.	2.77	Challenging
3.	I often feel like I have the opportunity to participate in classroom discussions and activities during face-to-face classes.	3.04	Challenging
Overall Mean		**2.81**	**Challenging**
	Accessibility		
4.	Commuting every day is hard for me.	2.53	Challenging
5.	Some teachers don't teach in face-to-face set up class.	2.05	Quite Challenging
6.	I've had difficulty accessing course materials or classroom technology during face-to-face classes.	2.56	Challenging
Overall Mean		**2.81**	**Challenging**
	Student's Well-being		
7.	Due to face to face set up I am overwhelmed by the schedule.	2.64	Challenging
8.	I often feel uncomfortable or unwelcome in the classroom due to	1.59	Not Challenging

	my identity (e.g., gender, race, ethnicity, sexual orientation, disability, etc.)		
Overall Mean		**2.81**	**Challenging**
	Financial		
9.	Our financial status barely supports my daily bills going to school.	2.55	Challenging
10.	The printing of requirements in hard copy incurs additional costs.	3.03	Challenging
Overall Mean		**2.70**	**Challenging**

Onsite Modality. The table presents the challenges faced by students during the implementation of hybrid learning in the onsite modality, which refers to face-to-face classes. The challenges are categorized into four indicators: Attitude towards Learning, Accessibility, Student's Well-being, and Financial.

Under the "Attitude towards Learning" indicator, students generally agreed (mean rating of 3.03) that a learning gap still exists after the pandemic. They also agreed (mean rating of 2.77) that they relied solely on the materials presented by their instructors for their learning. Additionally, they agreed (mean rating of 3.04) that they often felt they had the opportunity to participate in classroom discussions and activities during face-to-face classes. The overall mean rating for this indicator was 2.81, indicating agreement.

In terms of "Accessibility," students generally agreed (mean rating of 2.53) that commuting every day was challenging for them. They disagreed (mean rating of 2.05) with the statement that some teachers didn't teach in the face-to-face class setup. However, they agreed (mean rating of 2.56) that they had difficulty accessing course materials or classroom technology during face-to-face classes. The overall mean rating for this indicator was 2.81, indicating agreement.

Regarding "Student's Well-being," students agreed (mean rating of 2.64) that they felt overwhelmed by the schedule in the face-to-face setup. However, they strongly disagreed (mean rating of 1.59) that they often felt uncomfortable or unwelcome in the classroom due to their identity (e.g., gender, race, ethnicity, sexual orientation, disability, etc.). The overall mean rating for this indicator was 2.81, indicating agreement.

In the "Financial" aspect, students agreed (mean rating of 2.55) that their financial status barely supported their daily expenses related to attending school. They also agreed (mean rating of 3.03) that the printing of requirements in hard copy incurred additional costs. The overall mean rating for this indicator was 2.70, indicating agreement.

The overall mean rating for the challenges encountered in the onsite modality of hybrid learning was 2.53, indicating agreement. This suggests that students face various challenges and difficulties even in the face-to-face setup of hybrid learning.

Differences of Challenges Encountered in Hybrid Learning Grouped According to the Profile of the Respondents

This part presents the differences in the challenges encountered by the respondents in terms of online and onsite modality when grouped according to their profile.

Table 6
Differences: Profile of the Respondents and Challenges Encountered by the Respondents in terms of Online Modality

Online Modality		**N**	**Mean**	**F Value**	**Sig**	**Decision**
Profile Variables						
Year Level	1st year	25	2.43	1.345	.267	Not Significant
	2nd year	18	2.47			
	3rd year	15	2.63			
	4th year	15	2.66			
City/ Municipality	Olongapo City	59	2.55	2.496	.067	Not Significant
	Subic	1	3.00			
	Castillejos	3	1.94			
	San Marcelino	10	2.53			
Family Monthly Income	Less than Php 5,000	9	2.75	1.032	.384	Not Significant
	Php 5,001- 10,000	26	2.52			
	Php 10,001- 15,000	22	2.47			
	Above Php 15,000	16	2.49			

Test of difference on the challenges encountered by the respondents in terms of online modality when grouped according to selected profile variables.

Table 6 shows the difference on the challenges encountered by the respondents when grouped according to selected profile variables in terms of online modality. It shows that there is no significant difference on the challenges encountered by the respondents and the following profile variables: year level, municipality, and family monthly income. The F values of 1.345, 2.496, and 1.032 with corresponding probability value of 0.267, 0.067, and 0.384 are not significant at α=0.05. This means that there is no sufficient evidence to prove the significance in the challenges encountered by the students in terms of online modality with the above-mentioned profile variables.

The profile variable "year level" does not affect the challenges encountered by the students in terms of online modality. This finding is in line with the research conducted by Capinding (2022), which indicates that there were no significant differences in mathematics interest and attitude among students across different year levels. The discussions from the study emphasize the importance of boosting students' motivation and interest in learning

mathematics during the Covid-19 pandemic, as these factors were essential for sustaining their learning progress.

The profile variable 'municipality' does not affect the challenges encountered by the students in terms of online modality. According to Laguador (2021), students are facing moderate challenges in terms of economics, instruction, and learning outcomes, irrespective of their location. The shift to flexible learning modalities during the pandemic has raised concerns among students about how to fully achieve learning outcomes, especially when laboratory-intensive classes are not available. Furthermore, students are grappling with challenges related to the delivery of instruction and communication with their teachers during these unprecedented times.

The profile variable "family monthly income" does not affect the challenges encountered by the students in terms of online modality. The study of Tazouti and Jarlégan (2019) examined the process of how socioeconomic status, specifically parents' education and income, indirectly relates to children's academic achievement through parents' beliefs and behaviours. Using structural equation modelling techniques, the author found that socioeconomic factors were related indirectly to children's academic achievement through parents' beliefs and behaviors, but that the process of these relations was different by racial group.

Table 7
Differences: Profile of the Respondents and Challenges Encountered by the Respondents in terms of Onsite Modality

Onsite Modality		**N**	**Mean**	**F Value**	**Sig**	**Decision**
Profile Variables						
Year Level	1st year	25	2.56	3.205	.028	Significant
	2nd year	18	2.38			
	3rd year	15	2.71			
	4th year	15	2.63			
City/ Municipality	Olongapo City	59	2.58	3.879	.013	Significant
	Subic	1	3.17			
	Castillejos	3	2.06			
	San Marcelino	10	2.53			
Family Monthly Income	Less than Php 5,000	9	2.74	1.439	.239	Not Significant
	Php 5,001- 10,000	26	2.59			
	Php 10,001- 15,000	22	2.50			
	Above Php 15,000	16	2.48			

Test of difference on the challenges encountered by the respondents in terms of onsite modality when grouped according to selected profile variables.

Table 7 shows the difference on the challenges encountered by the respondents when grouped according to selected profile variables in terms of onsite modality. It shows that there is a significant difference on the challenges encountered by the students and the following profile variables: year level and municipality. The F values of 3.205 and 3.879 with corresponding probability value of 0.028 and 0.013 are significant at α=0.05. This means that there is sufficient evidence to prove the significance in the challenges encountered by the students in terms of onsite modality with the above-mentioned profile variables.

The profile variable "year level" does affect the challenges encountered by the students in terms of onsite modality. Aguilos and Bustillo (2022) observed that as students advance to higher academic levels, they become more responsive to the increasing costs associated with their studies. Along their academic journey, they encounter more demanding course requirements that come with additional expenses, over and above the basic school fees, board and lodging, commuting, and other related costs. As students' progress on the academic ladder, the financial burden tends to rise due to the amplified academic demands and necessities.

The profile variable "municipality" does affect the challenges encountered by the students in terms of onsite modality. As suggested by Alcantara et al. (2022), it is advisable for school administrators and teachers to develop programs that specifically target the challenges students face in attending school, particularly concerning the hybrid between their homes and the school. Simultaneously, the government should take the initiative to implement infrastructure improvements that would alleviate concerns related to long-distance travel for students. By adopting these measures, educational institutions and policymakers can collectively enhance accessibility and reduce barriers to education for students.

On the other hand, when the respondents are group according to their family monthly income the data shows no significant difference with the challenges encountered by the respondents in terms of onsite modality with the F value of 1.439 and a probability value of 0.239 at alpha 0.05.

The profile variable 'family monthly income' does not affect the challenges encountered by the students in terms of onsite modality. As per Adzido et al. (2016), although family financial status does influence students' performance to some extent, it is not a decisive factor in the academic difficulties they face. Several student respondents reported that their family income does not necessarily indicate the obstacles they encounter or their academic success. The authors highlight the significance of government and external financial support to ensure the nation's future socio-economic progress, recognizing these students as valuable assets and potential future leaders of the country.

CONCLUSIONS AND RECOMMENDATIONS

1. In terms of the profile of the respondents, the following conclusions were made, (a) The 1st year has the highest number of students, followed by a

decrease in the 2nd year, while the 3rd and 4th years have an equal frequency, suggesting consistent cohort progression; (b) Olongapo City has the highest representation of BSEd-Math students at Gordon College, while Subic has the lowest representation, and Castillejos and San Marcelino contribute to intermediate percentages; (c) Most BSEd Math students come from families with monthly incomes ranging from Php 5,001 to 10,000, while a smaller percentage come from families with incomes below Php 5,000.

2. The conclusions drawn from the challenges encountered in the implementation of hybrid learning are as follows: (a) In the online modality, students face difficulties with math symbol encoding and relying on others for answers, while also experiencing challenges with connectivity and communication. They feel tired from long hours of studying and struggle with time management due to multiple tasks. Financial burdens and limited access to devices are additional challenges. (b) In the onsite modality, students perceive a learning gap and depend on instructor-provided materials. They have opportunities for participation in classroom discussions but face difficulties with commuting and accessing course materials. While the schedule is overwhelming, students do not feel uncomfortable or unwelcome based on their identity. Financial challenges arise, requiring additional support for expenses and printing requirements. Both modalities present various challenges and difficulties for students in hybrid learning.
3. (a) There is no significant difference on the challenges encountered by the respondents in the implementation of hybrid learning when grouped according to their profile-variables in terms of online modality.
   (b) There is a significant difference on the challenges encountered by the respondents in the implementation of hybrid learning when grouped according to their year level and municipality in terms of onsite modality.
   (c) There is no significant difference on the challenges encountered by the respondents in the implementation of hybrid learning when grouped according to their family monthly income in terms of onsite modality.

1. To address the challenges faced in the online modality, it is recommended to provide enhanced technical support and training to students. This includes offering comprehensive assistance in encoding math symbols, navigating online tools, and troubleshooting connectivity issues. Additionally, providing guidance on effective communication with instructors and facilitating familiarity with the online learning environment will empower students to navigate their virtual classrooms more effectively.
2. To alleviate the difficulties faced by students in managing their workload and maintaining their well-being, it is recommended by the researchers to implement strategies and resources. This may involve developing programs that offer guidance on effective time management, stress management techniques, and promoting a healthy work-life balance. Providing support services such as counselling, mentoring, or wellness initiatives can help address fatigue and enhance students' overall well-being.

3. Considering the varying financial backgrounds of students, it is also recommended by researchers to establish financial assistance programs. Specifically, providing support to students from families with lower monthly incomes, particularly those below Php 5,000, can alleviate financial burdens and ensure equal access to education. Furthermore, offering additional resources or subsidies to cover internet expenses and improve access to devices necessary for online learning will contribute to a more equitable learning environment.
4. In the onsite modality, bridging the perceived learning gap among students is crucial. This can be achieved by identifying areas of improvement and implementing targeted interventions, remedial programs, or additional resources to address any disparities. Furthermore, enhancing accessibility is essential in ensuring a conducive learning environment. This may involve addressing challenges related to daily commuting, improving access to course materials, and upgrading classroom technology to provide a more seamless and inclusive learning experience.
5. Recognizing the diverse needs and experiences of students, it is recommended to tailor support and interventions based on student profiles. This includes understanding the challenges faced by students in different year levels, municipalities, and family income brackets. By adopting a targeted approach, educational institutions can design and implement initiatives that address the specific needs of students at different stages of their academic journey and from diverse backgrounds, ultimately fostering an inclusive and supportive learning environment**.**

FURTHER STUDY

Every research is subject to limitations; thus, you can explain them here and briefly provide suggestions to further investigations.

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