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Abstract

This study examined the performance and challenges experienced by fourth-year Bachelor of Science in Hospitality Management (BSHM) students at Bulacan Agricultural State College during their on-site and online laboratory classes in Academic Year 2020–2022. A descriptive research design was employed, and the data were collected from 60 randomly selected students using a structured survey instrument aligned with CHED CMO No. 62 program outcomes. The questionnaire, administered via Google Forms, was validated and showed excellent internal consistency, with Cronbach's α = 0.944 for online and Cronbach's α = 0.918 for on-site learning. The study gathered quantitative data on students' academic performance, learning environment, psychological well-being, technological access, time management, financial concerns, and social interaction. Descriptive statistics, frequencies, means, and standard deviations were used to summarize the data. To compare student experiences across modalities, non-parametric tests were employed after the normality assumptions for t-tests were not met. The results revealed statistically significant differences in psychological (p = 0.020) and environmental (p = 0.000) challenges, with online learners reporting more difficulties. However, no significant differences were identified in performance outcomes (GWA = 2.01 online vs. 2.03 onsite; p = 0.340) or in technology access, time management, financial issues, or social interaction. Thus, the study contributes to the understanding of how learning modality affects student well-being in practice-based programs such as hospitality management. While academic performance remained constant, the psychological and environmental burdens of online learning suggest the need for targeted interventions, such as institutional strategies to strengthen student support systems, particularly in virtual laboratory-based courses.

Keywords: *challenges, compare, hospitality management, laboratory, online, onsite, performance, students*

Introduction

In the latter part of 2019, the unanticipated outbreak of the Covid-19 pandemic changed the learning and teaching system. Almost all educational institutions that relied on traditional knowledge and teaching methods shifted to online learning and instruction. The shift from classroom-based or traditional systems to online learning during the COVID-19 pandemic drew increased attention from researchers, who examined how teachers and students handled the new system. Many questioned the efficacy of the online system in terms of the skills and knowledge needed by the students, especially the Hospitality

Management students.

According to CHED Memorandum No. 62, the Hospitality Management program should equip students with the competencies needed to execute operational tasks and management functions in food production (culinary), accommodation, food and beverage services, events management, and product development. In the study by Hafeez et al. (2021), the COVID-19 pandemic prompted the shift to online learning and teaching in Pakistan, revealing that teachers and students faced numerous problems. Most of them were not satisfied due to problems and challenges they have encountered. In addition, Dinakaran (2021) stated in his study that the COVID- 19 led online hospitality education in India had a substantial impact on the delivery of quality hospitality education by certain influencing factors such as content quality, timeliness, completeness, format and accessibility, learner motivation, and self-efficacy. It also increased the complexity of the whole process. Students gain essential skills for their future through the Internet and education (Al-Salman & Haider, 2020). Several comparative studies, including those by Lockman and Schirmer (2020), Pei and Wu (2019), and González-Gómez et al. (2016), have examined to determine the effectiveness of online or hybrid learning versus traditional in-person teaching methods.

Sadhale and Joshi (2021) stated that hotel management programs are designed in a way that prioritizes practical content. Students are keener to have hands-on experience, or they carry notions that when they enroll in this program, they will be able to achieve all the things that they aspire to. The lockdown situation was challenging for both students and teachers. In response, online learning options were made available, but teaching the practical components of the program remained difficult.

In light of the COVID-19 pandemic, fourth-year Hospitality Management students experienced a combination of on-site and online learning in their laboratory subjects, which brought about several challenges and adjustments. The internet and education have been integrated to equip people with the skills required for the future (Al-Salman & Haider, 2020). Online and in-person instruction are combined in blended learning, while the fully online approach denotes that the course material is distributed entirely online. Students find online education convenient since they have access to materials around the clock (Stern, 2020). Online learning makes education more student-centered, where students actively participate in the learning process and teachers serve as mentors and advisers (Al-Salman et al., 2021). However, students also face issues like missing face-to-face interaction, getting distracted by digital devices, and having limited access to technology and the internet. Remote learning can both enhance and hinder student engagement and academic performance. It offers students more flexibility, online resources, and personalized learning opportunities (Wallace, 2023).

Numerous comparison studies have been conducted to demonstrate the point and investigate whether online or hybrid learning is more effective, or whether face-to-face or traditional teaching techniques are more effective (Lockman & Schirmer, 2020; Pei & Wu, 2019; González-Gómez et al., 2016). The findings indicate that students fare better in online learning than in conventional learning. The challenges educators experience when transitioning from an offline to an online form of teaching were emphasized by Henriksen et al. in 2020. Several research studies on online learning have also examined student happiness, e-learning acceptance, factors influencing the success of distance learning, and learning effectiveness (Sher, 2009; Reeve & Lee, 2014; Yen et al., 2018).

In addition, Gamage et al. (2020) stated in their study that during the pandemic, an increasing number of universities and colleges took steps to convert their teaching modalities, including laboratory activities, into an online or blended mode of delivery. However, when classes are suspended, students in hospitality management encounter challenges in acquiring competencies that meet industry benchmarks (Carreon-Monterola et al., 2019). Regardless of the actions taken, universities and colleges must continue to maintain their high academic standards and provide a high-quality student experience to ensure the

delivery of learning outcomes associated with each degree program.

Therefore, Rincón-Flores et al. (2024) found that incorporating innovations such as Adaptive Learning positively influences student learning and development by integrating aspects of a flipped classroom, self-regulated learning, and microlearning into an Adaptive Learning Strategy. The implementation of instructional tools such as video tutorials, interactive modules, and simulation-based learning has proven effective in addressing the challenges posed by class suspensions (Labrado et al., 2020). These tools may be considered in the implementation of future class suspensions or interruptions.

Hence, this study provides an initial understanding of how various teaching modalities affect the academic performance of hospitality management students during COVID-19, particularly for laboratory subjects such as Bread and Pastry, Western Cuisine, Catering, and Bar Management. It focuses on the students' demographic profile, challenges encountered, and performance level during their online and on-site laboratory subjects. The study aimed to identify areas where students struggled, which could help establish effective teaching strategies for conducting both onsite and online laboratory subjects for Hospitality Management students.

Materials and Methods

The study employed a descriptive research design targeting fourth-year Bachelor of Science in Hospitality Management students enrolled at Bulacan Agricultural State College from 2021 to 2022. The main instrument used to evaluate the performance level of the students during their on-site and online laboratory subjects was a self-designed survey questionnaire based on CHED CMO No. 62 program outcomes. A structured questionnaire was used to assess the challenges encountered by HM students during their on-site and online class experiences. It was then transferred to Google Forms to be distributed to the respondents. To support the study, journals, articles, published undergraduate theses and dissertations, books, and other relevant materials were utilized.

To assess the reliability of the questionnaires, the study applied Cronbach's Alpha, which produced reliability scores of 0.944 for online learning and 0.918 for on-site learning. These scores indicate an excellent level of internal consistency within the survey instruments used. Participation in the survey was strictly voluntary and anonymous, creating an environment where students could engage openly and honestly without fear of repercussion. This approach was important in ensuring the reliability and validity of the findings, as it fostered a sense of trust and encouraged truthful responses from the participants.

The researchers used a simple random sampling approach. To determine the sample size of the students, Cochran's formula was applied. Initially, the goal was to reach 95 students out of 125; however, only 60 students participated in the survey due to limitations related to internet access and technology. A response rate of 63 percent is considered reliable, especially when strong sampling techniques and well-validated tools are utilized. Heale and Twycross (2015) and Karnia (2024) emphasize that achieving a target is not sufficient; reliability also depends on minimizing bias and ensuring consistent results.

In social research surveys, Babbie (2007) stated that a 50% response rate may be regarded as acceptable, while Richardson (2005) suggested that the desirable response rate should be at least 60%. In addition, in fields such as health sciences, response rates above 60% are generally regarded as reliable and are commonly used to establish validity. Furthermore, Sataloff and Vontela (2021) noted that acceptable response rates can vary between 40% and 75% across different specialties, while the Journal of the American Medical Association requires a minimum response rate of 60%.

The data collection process was comprehensive, involving the gathering of demographic information to understand the background of the respondents. Furthermore, the researchers conducted statistical analyses of the survey responses to pinpoint specific difficulties that students faced in both on-

site and online class environments. The analysis yielded vital descriptive statistics, which included frequency counts, percentages, means, and standard deviations, providing a clear picture of students' experiences.

For comparative analyses between the two learning modalities, namely on-site and online classrooms, t-tests were utilized, allowing for a deeper understanding of performance differences. The assumption of normality for the t-test was assessed by examining the normality of the data and the homogeneity of variance. Given that the data did not meet the assumption of normality, and recognizing the importance of obtaining valid statistical results, the researchers decided to use non-parametric statistical tests for the analyses. Non-parametric tests are robust alternatives that do not rely on assumptions about the distribution of the population from which the sample was drawn, making them appropriate for the data.

Results and Discussion

Table 1

Socio-Demographic Profile of the Respondents

Variable		Frequency	Percentage (%)
Age	20	14	23
	21	24	40
	22	15	25
	23	5	9
	24	2	3
Sex	Female	42	70
	Male	18	30
Civil Status	Single	60	100
Employment Status	Full-time students/Unemployed	26	43.34
	Part-Time/Online Selling	2	3.33
	With Work	32	53.33
Total	**N**	**60**	**100**

The findings from the study on BSHM fourth-year students provide valuable insight into how socio-demographic factors can influence academic experiences. With a demographic breakdown showing 30% male and 70% female participants, the majority of students, at 53.33%, were employed, which could potentially affect their academic focus and performance. This indicates that students are balancing work with their studies, which could lead to divided attention and increased stress. The fact that 43.34% of the respondents were regular students who were unemployed suggests a commitment to their education, although the small percentage (3.33%) engaged as part-time online sellers while studying indicates that most students prioritized their studies over work.

Acheampong's study (2023) emphasizes that sociodemographic characteristics and parents' socioeconomic status significantly impact students' academic achievements. The results indicate that 60% of students' circumstances were influenced by these factors, alongside the 57% influence from parents' socioeconomic status during the COVID-19 outbreak, which aligns with the trends observed in the BSHM study. These effects could mean that these factors play a crucial role in determining how both employed and unemployed students manage their studies. Thus, the relationship between the socio-demographic factors and academic performance among BSHM fourth-year students is truly relevant to understand. This can guide interventions aimed at supporting students, promoting academic success, and addressing the needs of those balancing work and studies.

Table 2

Respondents' Online Platform/s Used for Asynchronous Class or Virtual Meetings

Respondent's Online Platform	Frequency	Percentage (%)
1. Google Meet	20	33.30
2. Google Meet, Zoom	19	31.70
3. Google Meet, Zoom, and Facebook	21	35.00
Total	**60**	**100.00**

Most of the students utilized a combination of Google Meet and Zoom (31.7%) and a combination of Google Meet, Zoom, and the Facebook platform (35%) for their online studies. In comparison, 33.3% relied solely on Google Meet for online classes. Thus, Google Meet emerged as the most commonly utilized online learning platform during asynchronous sessions.

This was supported by the study of Santiago et al. (2022), among synchronous online classes, Google Meet was utilized by 78% of the students, who demonstrated proficiency in using this platform. This proficiency may be attributed to Google Meet's accessibility and compatibility across various devices.

Table 3

Respondents' Devices Utilized During Online Classes

The Devices Utilized During the Online Class	Frequency	Percentage (%)
Cellphone	40	66.70
Cellphone and laptop	20	33.30
Total	**60**	**100.00**

According to the findings, 33.3% of the respondents used a laptop and a mobile device for their asynchronous lessons. In contrast, 66.7% of participants relied solely on a mobile device for their online classes. This underscores the increasing dependence on portable technology for learning.

Kutty (2022) reported that 70% of students had access to a device for online study, whereas 13% did not. Most students used their smartphones for academic purposes, and 17.1% had network issues. The majority of students took online classes using their parents' mobile devices.

Table 4

Respondents' Source of Internet

Source of the internet	Frequency	Percentage (%)
Mobile data	25	41.70
Wi-Fi	27	45.00
Wi-Fi and mobile data	8	13.30
Total	**60**	**100.00**

A significant portion of the respondents, specifically 45%, reported that they primarily depended on Wi-Fi connectivity to participate in their online classes. In contrast, 41.7% relied on mobile data for internet access during these sessions. Interestingly, only 13.3% of the respondents used both Wi-Fi and mobile data interchangeably for their online learning experiences.

Educational institutions should consider developing mobile-friendly course materials and platforms to enhance accessibility and engagement. Since a significant percentage of students rely solely on mobile devices for their online classes, ensuring that all digital resources are optimized for mobile use can improve accessibility and the overall learning experience.

The study by Obligar et al. (2021) highlighted that internet access is highly valuable for respondents; however, various challenges can hinder students' learning potential in the current situation.

The Challenges Students Encounter During Their On-Site and Online Laboratory Classes

The results show the challenges encountered by BSHM students during their on-site and online classes in their laboratory subjects. With a p-value of 0.020, which is less than 0.05, there is a statistically significant difference in psychological challenges between onsite and online learning environments. The negative Z-score, based on positive ranks, indicates that students experience significantly more psychological challenges in the online learning environment compared to the onsite environment.

Table 5

Respondent's Challenges Encountered During the On-Site and Online Class

Challenges	Learning Mode	Mean	Standard Deviation	z-value	p-value	Remarks
Technological	Onsite	3.20	.81	-0.827	.408	Non-Significant
	Online	3.11	.92			
Time Management	Onsite	3.05	.81	-0.132	.895	Non- Significant
	Online	3.09	.79			
Financial	Onsite	2.97	.86	-1.094	.274	Non-Significant
	Online	3.09	.94			
Psychological	Onsite	3.02	.85	-2.39	.020	Significant
	Online	3.38	.76			
Social Interaction	Onsite	3.77	.89	-1.53	.124	Non-Significant
	Online	3.59	.78			
Learning Environment	Onsite	3.20	.64	-3.85	.00	Highly Significant
	Online	3.68	.79			

Note. Value significant at 5% refers to a p-value less than 0.0375 or $p < 0.05$.

Aligning with the study of Barrot et al. (2021), the findings indicated that college students experienced various online learning challenges in terms of both type and extent. Their most significant challenge was related to their home learning environment, while the least challenging aspect was technological literacy and competency. This finding is supported by Quillon and Kurniawan's (2023) study, which revealed that university students who had a negative perception of the online learning environment, particularly concerning assignments, interaction with lecturers and peers, available facilities and equipment, home conditions, and physical classes, tended to experience poorer mental health.

Moreover, another challenge faced by students is the learning environment, with a p-value of 0.000 (less than 0.05), indicating a highly statistically significant difference in the challenges faced within this environment. The negative Z-score, resulting from positive ranks, suggests that students encounter more challenges in the online setting compared to the onsite setting.

Aroonsrimarakot et al. (2022) identified several significant challenges in online learning, including distractions from other websites, a poor understanding of lesson context, unreliable internet connections, time management issues, difficulties during online exams, a lack of motivation, unsuitable home study environments, and complications with assignments. Contributing factors included noise distractions, inadequate teacher technical skills, disorganized content, and technological issues affecting audio or video quality.

In the area of technology, the p-value is 0.408, which is greater than the standard significance level of 0.05. For time management, the p-value is 0.895, which is significantly greater than 0.05. In terms of financial challenges, the p-value is 0.274, which is also greater than 0.05. Finally, for social interaction,

the p-value is 0.124, which again exceeds 0.05. These results indicate that there is no statistically significant difference in the challenges encountered by students during On-Site and Online classes across these factors.

These results emphasize the psychological and environmental challenges faced by students in online learning compared to onsite classes, while also highlighting that certain areas remain consistent across both modalities. Vergara et al. (2023) found that, aside from housekeeping, student laboratory activity accomplishments in terms of culinary and kitchen essentials were moderate. Their concluding finding stated that although there is no significant correlation between students' self-efficacy in terms of housekeeping skills and their actual performances in laboratory activities, and their attainments in laboratory activities, there exists a significant correlation between students' self-efficacy in terms of knowledge and their actual performances in laboratory activities, as well as their attainments in these activities.

Performance Level of the Students During Their On-Site and Online Laboratory Subjects

Table 6

Difference in Students' Performance Level on Onsite and Online Learning

Learning Mode	Mean GWA	Standard Deviation	z-value	p-value	Remarks
Onsite	2.03	.391	-.95	.340	Non-significant
Online	2.01	.404			

Note. Value significant at 5% refers to a p-value less than 0.0375 or $p < 0.05$.

The findings show the difference in students' performance levels between onsite and online learning modalities. Students engaged in online learning had a somewhat better General Weighted Average (GWA) of 2.01 compared to those participating in onsite learning, which had a GWA of 2.03. However, since a lower GWA indicates better academic performance, the difference between the two groups is minimal. The z-score of -0.95 suggests that the difference is less than one standard deviation from the mean. The p-value of 0.340 is above the significance level of 0.05, indicating that the difference is not statistically significant. Therefore, there is no substantial difference in student performance between onsite and online learning modalities; both approaches appear to yield comparable academic outcomes.

A study by Wells et al. (2022) found no significant difference in learning outcomes between the methods of course delivery. This indicates that both on-site and online modalities can be effectively used for laboratory subjects. However, with a General Weighted Average (GWA) of 2.03 for on-site courses and 2.01 for online courses, it is essential to refine teaching methods to improve the performance levels of BSHM students. Thus, Legaspi et al. (2022) discovered that face-to-face instruction is the most effective teaching method for conducting HM laboratory courses, which serves as a foundation for developing skill competencies. Their findings revealed a significant difference between the teaching methods in terms of (1) the learning practices utilized in the HM laboratory courses for each teaching modality, (2) student engagement and effort in each teaching method, and (3) the improvement in skill competencies of students under each teaching modality.

Conclusion

The study on BSHM fourth-year students provides valuable insight into how sociodemographic factors can influence academic experiences. With a demographic breakdown showing 30% male and 70% female participants, the majority of students, at 53.33%, were employed, which could potentially affect their academic focus and performance. This indicates that students are balancing work with their studies, which could lead to divided attention and increased stress. The fact that 43.34% of the respondents were

regular students who were unemployed suggests a commitment to their education, although the small percentage (3.33%) of those who worked as part-time online sellers while studying indicates that most students might be prioritizing their studies over work. Most of the students relied on portable technology for their online classes, primarily using platforms like Google Meet. The results highlight significant psychological and learning challenges faced in online modality compared to onsite learning, as shown by the statistically significant differences in p-values. Despite these challenges, the academic performance, measured by General Weighted Averages (GWA), shows that students in online learning performed similarly to their onsite counterparts, indicating no substantial difference in their learning outcomes. Overall, while online learning has evident unique challenges, it also proves to be a feasible mode of education, allowing students to maintain comparable academic performance. This study suggests that teaching modalities may need to address the psychological and environmental challenges presented in online learning in order to enhance the overall educational experience for students.

Recommendations

The researchers recommend that future research should examine how psychological challenges in online learning affect BSHM students over the long term. This includes looking at their academic motivation, retention rates, and readiness for careers. Strengthening the student support system, especially for mental health, and creating conducive learning environments are essential. Although this study found similar academic performance in both online and onsite learning, there is a need to investigate the quality of practical skills and students' improvement, especially in hospitality courses that require laboratory work. Researchers should also assess how blended learning models can improve both theoretical knowledge and practical skills. Additionally, it is essential to investigate how specific teaching methods can help address challenges in online learning and enhance student engagement. Given the impact of sociodemographic factors, future studies should analyze how gender, job status, and the type of learning device affect the educational experience. Understanding the preparedness of institutions and the availability of support systems for online and hybrid learning, particularly in settings with limited resources, is also crucial. Finally, a long-term study tracking graduates' ability to apply their skills in real-world hospitality settings can provide valuable insights into the effectiveness of different teaching modalities.

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