

## PERCEIVED SKILL GAPS AMONG STUDENTS DUE TO REDUCED ONSITE LABORATORY ACTIVITY

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University of Perpetual Help – DALTA- Molino, Philippines  
Conference Proceedings

College of International Tourism and Hospitality Management  
Cavite, Philippines

DOI: <https://doi.org/10.54476/ioer-imrj/399912>

### ABSTRACT

This study investigates skill gaps in the College of International Tourism and Hospitality Management due to reduced onsite laboratory classes during the COVID-19 pandemic. Significant correlations reveal interventions needed in specific courses, while students in Tourism Management report positive responses to virtual learning opportunities. Data from 65 respondents were gathered using a researcher-made survey. Descriptive methods and statistical analyses were employed to examine the research objectives, including weighted mean and Pearson correlation. The study emphasizes the importance of hands-on experiential learning in Tourism and Hospitality programs and proposes guidelines to address skill gaps effectively. Further research is recommended to support identified gaps, expand to other programs, enhance guidelines, and explore technology for remote laboratory activities.

*Keywords: COVID-19, Online classes, Distance Learning, Laboratory, Instruction, perceptions of online learning, education during COVID-19, blended learning, Hospitality Education*

### INTRODUCTION

The COVID-19 pandemic has profoundly impacted people's lives worldwide, prompting rapid and drastic changes across all aspects of society. Tourism establishments faced severe challenges, witnessing significant declines in profit, and some even ceased operations. In response, the hospitality industry adapted its operations to prioritize health, safety, and enhanced visitor experiences, aiming to encourage future tourism (Choi et al., 2021). Concurrently, the education sector underwent a paradigm shift, with schools and universities transitioning to online modalities, challenging administrators and faculty in Higher

Education Institutions (HEIs) to develop innovative strategies.

Among the pressing issues confronting HEIs are the challenges in conducting Laboratory Classes, which play a crucial role in experiential learning—a high-impact teaching practice benefiting students. However, due to the pandemic, institutions resorted to online lectures and laboratory classes, attempting to supplement hands-on experiences virtually (Stenson et al., 2022). While such measures sustain the continuity of classes, they cannot fully replace the value of face-to-face learning, particularly in the context of Hospitality and Tourism Management programs



(Almahasees et al., 2021). Scholars like Joshi and Gupta (2021) have highlighted the pandemic's adverse effects on the academe, especially in terms of practical training and learning, particularly in laboratory courses like food production and services. Practical learning holds immense significance for programs such as Tourism and Hospitality, as the nature of these fields demands hands-on commitment (Choi et al., 2021). Nevertheless, the pandemic has rendered such engagement nearly impossible, forcing students to resort to online activities and make use of available home equipment to address their laboratory requirements.

In the Philippines, numerous HEIs offer Hospitality and Tourism Management programs, which include various laboratory class units. These courses are integral components of the curriculum, providing students with opportunities for hands-on experiences (Tria, 2020).

To shed light on this situation, the proponents of this study aim to identify skill gaps among students in the College of International Tourism and Hospitality Management concerning required competencies in laboratory courses taken during the pandemic. Previous studies during the pandemic have revealed students' preference for hands-on practice in laboratory classes, underscoring the limitations of online modalities in comparison to face-to-face learning (Mojica & Upmacis, 2022). However, considering the changes and limitations imposed by the pandemic, it remains essential to assess whether the required skills for each course are adequately addressed in virtual laboratory experiences and whether these experiences meet the standards set by the Commission on Higher Education.

The data collected through this study could inform the establishment of guidelines for conducting hybrid and/or virtual laboratory classes, offering students a comprehensive learning experience to prepare them for future careers in Tourism and Hospitality. The research contributes valuable insights into adapting and optimizing education during unprecedented times. Further studies are recommended to support identified skill gaps, expand the scope to other programs and

institutions, enhance the proposed guidelines, and explore cutting-edge technologies facilitating remote laboratory activities.

### OBJECTIVES OF THE STUDY

Amidst the challenges posed by the pandemic, this research delves into the nuanced experiences of students in hospitality management programs. Primarily, it aims to provide a comprehensive understanding of the impact on learning, competencies, and the effectiveness of virtual laboratory classes. It also attempts to achieve the following specific objectives:

1. Determine the demographic profile of the respondents, specifically focusing on the variables of age, sex, and program.
2. Identify the laboratory courses that students undertook during the pandemic period.
3. Assess the frequency with which students achieve the desired level of competencies about the sufficiency of opportunities provided for learning.
4. Examine the frequency with which respondents acquire industry-standard skills in the following courses: Food Production, Housekeeping, Bar and Beverage, Front Office, Tour and Travel, and Philippine Gastronomical Tourism.
5. Evaluate the appropriateness of utilized learning modalities and activities in teaching laboratory courses during the pandemic, as perceived by the respondents.
6. Investigate the existence of any significant relationship between the levels of sufficient opportunities provided to learners during virtual laboratory classes.
7. Propose guidelines based on the research findings that can aid in achieving the required course competencies effectively.

### METHODOLOGY

*Respondents and Survey.* This research used the descriptive method, describing data and characteristics of the studied population. The survey was conducted in September 2022 using Google Forms and distributed through Facebook Messenger Student Group Chat and MS Teams.



The researcher-made survey was validated, and respondents confirmed informed consent before participation.

*Scope.* Students from the College of International Hospitality Management at the University of Perpetual Help–DALTA Molino Campus, pursuing a Bachelor of Science in Tourism Management and a Bachelor of Science in Hospitality Management, were the respondents. Purposive Sampling yielded 65 participants who took virtual laboratory classes in 2020-2021 and 2021-2022.

*Statistical Treatment.* Percentage (P) was used to compare the frequency of responses (f) to the total number of respondents (N) for statements of problems 1 and 2. The formula is:

$$P = \frac{f}{N} \times 100$$

Where:

f = frequency responses

N = total number of respondents

For statement of the problems 3, 4, and 5, Weighted Mean and Standard Deviation were used.

The Weighted Mean (X) is used to determine the quantitative average of the respondents to the items in the questionnaire. The responses were given weights based on the Likert-scale provided. The formula is:

$$X = \frac{\sum fx}{N}$$

Where:

X = weighted mean

fx = the products of the frequency and their unit weights

$\sum fx$  = the sum of the products of the frequency

Legend of the Verbal Interpretation of the Weighted Mean:

1.00 to 1.79	Never
1.80 to 2.59	Seldom
2.60 to 3.39	Sometimes
3.40 to 4.19	Often
4.20 to 5.00	Always

Standard Deviation was also used in this study. The formula for standard deviation is:

$$\sigma = \sqrt{\frac{\sum (x - \mu)^2}{N}}$$

where,

$\sigma$  = population standard deviation

$\sum$  = sum of...

$\mu$  = population mean

n = number of scores in sample.

To determine the significant relationship between levels of sufficient opportunities given to the learners during virtual laboratory classes, Pearson product-moment correlation was used. The Pearson coefficient is a type of correlation coefficient that represents the relationships between two variables that are measured on the same interval or ratio scale. The Pearson coefficient is a measure of the strength of the association between two continuous variables.

The formula is:

$$r = \frac{[n(\sum xy) - \sum x \sum y]}{\sqrt{[n(\sum x^2) - (\sum x)^2][n(\sum y^2) - (\sum y)^2]}}$$

Where:

x = observed data for the independent variable

y = observed data for the dependent variable

n = sample size

r = degree of relationship between x and y



Interpretation of the calculated relationship between the two variables shall be based on the following values:

Range of Person's r:

Range of Values	Interpretation
0.00	No correlation
± 1.00	Perfect correlation
± 0.01 - ± 0.25	Very low correlation
± 0.26 - ± 0.50	Moderately correlation
± 0.51 - ± 0.75	High correlation
± 0.76 - ± 0.99	Very High correlation

RESULTS AND DISCUSSION

1. Perceived Skill gaps among Students Due to Reduced Onsite Laboratory Activity

1.1. In terms of Age

This part of the presents the results and discussions of the survey. A total of 65 student respondents were able to accomplish the conducted survey online.

**Table 1**  
Percentage and Frequency Distribution in Age of the Respondents

Age Interval	Frequency	Percent (%)
18 – 20 years old	30	46.15
21 – 23 years old	29	44.62
24 years old and above	6	9.23
Total	65	100.00

Table 1 shows the percentage and frequency distribution of participants according to their age interval, based on the presented data, the largest number of participants ranged from the group 18 to 23 years old or 46.15%, while the lowest score interval ranged from 24 years old and above group or 9.23%.

1.2. In terms of Sex

Table 2 shows the percentage and frequency distribution in Sex of respondents. The majority of the respondents are female at a frequency of 36 and a rate of 55.38%. On one hand, males are at 29 at 44.62%.

**Table 2**  
Percentage and Frequency Distribution in Sex of respondent

Sex	Frequency	Percent (%)
Male	29	44.62
Female	36	55.38
Total	65	100.00

1.3. In terms of Program

**Table 3**  
Percentage and Frequency Distribution in the Program of Respondents

Program	Frequency	Percent (%)
BS in Hospitality Management	32	49.23
BS in Tourism Management	33	50.77
Total	65	100.00

Table 3 shows the percentage and frequency distribution in the Program of respondents. Based on the data presented, BS in Tourism Management students have the greatest number of responses at a frequency of 33 and a percentage of 50.77%. Student respondents who are taking BS in Hospitality Management are 32 at 49.23%.

2. Percentage and Frequency Distribution of Laboratory Courses taken by the students during the pandemic.

Table 4 exhibits the Percentage and Frequency Distribution of Laboratory Courses taken by the students during the pandemic (School



Years 2020-2021 and 2021-2022). Based on the data, a large number of respondents have taken the course Kitchen Essentials and Basic Food Preparation. While Applied Business Tools & Technologies in Hospitality is the least taken course by the respondents.

**Table 4**  
*Percentage and Frequency Distribution of Laboratory Courses taken by the students during the pandemic (SY 2020-2021 and SY 2021-2022)*

Laboratory Courses	Frequency	Percent (%)
Kitchen Essentials and Basic Food Preparation	32	49.23
Bread and Pastry	15	23.08
Fundamentals in Food Service Operations	4	6.15
Applied Business Tools & Technologies in Hospitality	1	1.54
Introduction to MICE as applied to Tourism	3	4.62
Housekeeping Operations	2	3.08
Gastronomy (Food and Culture)	22	3.08
Catering Management		3.08
Bar and Beverage Management	4	6.15
<b>Total</b>	<b>65</b>	<b>100.00</b>

**3. Level of Frequency towards sufficient opportunities to display and develop competencies**

Table 5 displays participants' frequency of agreement with sufficient opportunities for competency development during virtual classes. Overall, the participants agreed with the opportunities, with a Grand Mean of 4.01. The highest mean (4.28) was for performance tasks/activities, indicating strong agreement. The

lowest mean (3.57) was for the suitability of the home environment, still showing agreement.

**Table 5**  
*Level of Frequency towards sufficient opportunities to display and develop competencies*

Statements	x	s	Interpretation
1. The given performance tasks/activities (hands-on activities) were sufficient to develop our knowledge and skills relevant to our course and program.	4.28	0.832	Strongly Agree
2. The given performance tasks/activities were applicable to the virtual laboratory set-up.	3.98	1.09	Agree
3. An on-line consultation to ask questions and feedback was provided to guide the students in accomplishing the given tasks.	4.18	0.782	Agree
4. The equipment and facilities needed for the laboratory activities were easily sourced out and/or readily available.	3.86	1.16	Agree
5. The timeframe in accomplishing the laboratory activities was sufficient and flexible.	4.12	0.868	Agree
6. The home environment is suitable for participating in laboratory activities.	3.57	1.45	Agree
7. Most of the laboratory activities were done individually at our own pace.	4.09	0.972	Agree
<b>Grand Mean/SD</b>	<b>4.01</b>	<b>1.02</b>	

According to a study conducted by Mojica & Upmacis (2021), not all students are content with the results of laboratory activities done at home.





Few student respondents of the said study did not find the home-based activities helpful in their studies, instead, they found them to be rather rudimentary. However, bringing laboratory activities at home can also help develop the student's creativity and thinking skills because of the need to be resourceful in using alternative equipment. This may not be fully exercised in a traditional face-to-face laboratory setup (Destino & Cunningham, 2020).

#### 4. Level of Frequency towards the competencies required per course

##### 4.1. In terms of Food Production

**Table 6**  
*Level of Frequency towards the competencies required per course in terms of Food Production*

Statements	x	s	Interpretation
1. Prepare and cook hot meals	3.95	0.935	Agree
2. Prepare and cook cold meals	3.46	1.25	Agree
3. Prepare sweets	3.72	1.13	Agree
4. Prepare and produce bread and pastry	3.82	1.20	Agree
5. Prepare and produce cakes and desserts	3.51	1.33	Agree
<b>Grand Mean/SD</b>	<b>3.69</b>	<b>1.17</b>	

Table 6 reveals that participants agree on achieving competencies in Food Production, with a grand mean of 3.69. The highest mean (3.95) was for "prepare and cook hot meals," interpreted as Agree. The lowest mean (3.46) was for "prepare and cook cold meals," also interpreted as Agree. Overall, respondents agree that competencies are achieved in the Virtual Laboratory Setup for Food Production.

##### 5. Perceived Skill Gaps among Students Due to Reduced Onsite Laboratory Activity

##### 5.1. In terms of Housekeeping

**Table 7**  
*Level of Frequency towards the competencies required per course in terms of Housekeeping*

Statements	x	s	Interpretation
1. Perform basic techniques in setting up room attendant's cart for service.	3.57	1.30	Agree
2. Demonstrate an ability to clean the bathroom, fixtures, furniture, and replenish supplies and amenities.	3.72	1.23	Agree
3. Identify the proper cleaning tools and demonstrate its proper usage.	3.80	1.15	Agree
4. Apply cleaning techniques on different types of floors, walls, furniture, in accordance with the industry standards and practices.	3.69	1.29	Agree
5. Demonstrate the basic procedures of setting up a bed.	3.77	1.32	Agree
<b>Grand Mean/SD</b>	<b>3.71</b>	<b>1.26</b>	

Table 7 shows the level of frequency of the competencies required per course in terms of Housekeeping. The grand mean for this table is at 3.71 which can be interpreted as Agree. The highest among the competencies is identifying the proper cleaning tools and demonstrating their proper usage with a mean response of 3.80 and a standard deviation of 1.15. This is interpreted as Agree. On one hand, the lowest mean among the competencies for Housekeeping is performing basic techniques in setting up a room attendant's cart for service with a mean response of 3.57 and a standard deviation of 1.30. This is interpreted as Agree.



### 5.2. In terms of Bar and Beverage

**Table 8**

*Level of Frequency towards the competencies required per course in terms of in terms of Bar and Beverage*

Statements	x	s	Interpretation
1. Perform basic cleaning of bar equipment and tools	3.71	1.2	Agree
2. Maintenance of bar public areas	3.71	1.3	Agree
3. Preparation and closing of bar for service	3.65	1.3	Agree
4. Taking bar orders.	3.63	1.3	Agree
5. Serving drinks	3.80	1.1	Agree
<b>Grand Mean/SD</b>	<b>3.70</b>	<b>1.2</b>	

The competencies and the level of frequency for Bar and Beverage Management are presented in Table 6.3. This table presents a grand mean of 3.70. The highest competency for Bar and Beverage Management is serving drinks with a mean response rate of 3.80, standard deviation of 1.17, and can be interpreted as Agree. The lowest competency is taking bar orders with a mean response rate of 3.63, standard deviation of 1.31, and is interpreted as Agree.

### 5.3. In terms of Front Office

Table 9 shows the level of frequency of competencies required per course in terms of the Front Office. The highest competency for the Front Office is receiving and processing reservations with a mean response of 3.82 and a standard deviation of 1.21. The lowest rated competency is provided concierge and bell services with a mean response of 3.49 and a standard deviation of 1.42. Both of the competencies are interpreted as Agree.

**Table 9**

*Level of Frequency towards the competencies required per course in terms of in terms of Front Office*

Statements	x	s	Interpretation
1. Receive and Process Reservations	3.82	1.21	Agree
2. Operate computerized reservations system	3.71	1.30	Agree
3. Conduct night audit	3.69	1.31	Agree
4. Provide concierge and bell services	3.49	1.42	Agree
5. Provide cashiering services	3.58	1.37	Agree
<b>Grand Mean/SD</b>	<b>3.66</b>	<b>1.32</b>	

### 5.4. In terms of Tours and Travels

**Table 10**

*Level of Frequency towards the competencies required per course in terms of in terms of Tours and Travels*

Statements	x	S	Interpretation
1. Create tour itineraries for different target markets.	3.97	0.960	Agree
2. Provide tour costing reflecting negotiated rates and agent commission.	4.02	1.00	Agree
3. Create and modify passenger name records using Amadeus or other GDS.	3.95	1.06	Agree
4. Prepare tour spiels.	4.00	0.945	Agree
5. Facilitate arrangements for accommodations, transportation, and other tour components.	4.20	0.845	Strongly Agree
<b>Grand Mean/SD</b>	<b>4.03</b>	<b>0.962</b>	



In Table 10, the level of frequency towards required competencies in Tours and Travels is shown. The grand mean is 4.03. The highest mean (4.20) is for "facilitate arrangements for accommodations, transportation, and other tour components" (Strongly Agree). The lowest mean (3.95) is for "create and modify passenger name records using Amadeus or other GDS" (Agree).

### 5.5. In terms of Philippine Gastronomical Tourism

**Table 11**

*Level of Frequency towards the competencies required per course in terms of in terms of Philippine Gastronomical Tourism*

Statements	x	S	Interpretation
1. Design a gastronomical experience that features gourmet and special cuisine in different Philippine destinations.	3.89	0.930	Agree
2. Participate in a food festival, cooking demonstration, wine tasting, or other culinary experience.	3.63	1.12	Agree
3. Describe and/or display different food/beverage preparation techniques.	3.63	1.14	Agree
4. Prepare a restaurant guide for a particular destination.	3.58	1.264	Agree
5. Prepare a report on consumers' evaluation of their gastronomical or culinary tourism experience.	3.58	1.188	Agree
<b>Grand Mean/SD</b>	<b>3.66</b>	<b>1.13</b>	

The competencies and the level of frequency of Philippine Gastronomical Tourism are presented in Table 11. This table presents a grand mean of 3.66. The highest competency for this course is designing a gastronomical experience that features gourmet and special cuisine in different Philippine destinations with a mean response rate of 3.89, standard deviation of 0.930, and can be interpreted as Agree. The lowest competencies are prepared a restaurant guide for a particular destination and prepare a report on consumers' evaluation of their gastronomical and culinary tourism experience. Both have a mean response rate of 3.58, a standard deviation of 1.264 and 1.188 respectively, and are interpreted as Agree.

### 6. Level of Frequency towards the learning modalities and implications

**Table 12**

*Level of Frequency towards the learning modalities and implications*

Statements	x	S	Interpretation
1. The virtual laboratory classes provide a sufficient hands-on experience.	3.54	1.151	Agree
2. Virtual laboratory classes are more flexible in terms of activity preparation and timeframe of submission compared to face-to-face laboratory classes.	3.58	1.23	Agree
3. Instructions for laboratory activities are easily understood during virtual classes.	3.68	1.125	Agree
4. The experience in virtual laboratory classes successfully prepares me in my future career.	3.37	1.31	Agree
5. Some laboratory activities are better accomplished face-to-face.	4.38	0.906	Strongly Agree
6. The home environment provides distractions in doing laboratory activities.	4.20	1.00	Strongly Agree
7. Virtual Laboratory discussion motivates the students in performing well in the class.	3.58	1.149	Agree
8. The class is satisfied with the outcome of activities done virtually.	3.55	1.177	Agree
9. Students have the facility to ask questions for clarification during virtual laboratory classes.	4.03	0.992	Agree
10. The learning outcomes in the syllabus are well-addressed and achieved during virtual laboratory classes.	3.75	1.096	Agree
<b>Grand Mean/SD</b>	<b>3.77</b>	<b>1.11</b>	

Table 12 shows the level of frequency of the learning modalities and their implications. The Grand mean for this table is at 3.77. The highest mean among the learning modalities and implications is some laboratory activities are better





accomplished face-to-face with a mean response of 4.38 and a standard deviation of 0.906 (Strongly Agree). The lowest mean is the experience in virtual laboratory classes that successfully prepares the future career with a mean response of 3.37 and a standard deviation of 1.31 (Agree).

The results show that the students still prefer to accomplish tasks in a face-to-face setup. Sonbuchner et al. (2021) agree that students are keen on the face-to-face delivery of laboratory classes and even educators themselves prefer the traditional onsite laboratory classes and virtual classes, according to their study, will only supplement face-to-face interaction and can never replace it. Almahasses et al. (2021) agree by saying that online learning can act as a barrier for students to engage with each other in accomplishing real class activities. These challenges pose threats to the students' welfare and personality.

## 7. Significant relationship between the level of sufficient opportunities given to the learners during virtual classes

### 7.1. In terms of Bachelor of Science in Hospitality Management

**Table 13**  
*Significant relationship between the level of sufficient opportunities given to the learners during virtual classes in terms of Bachelor of Science in Hospitality Management*

Article	Degree of Freedom	Critical Value	Relationship	Computed value (t)	Pearson Value (r)	Description	Interpretation
8.1.1 Food Prod	63	1.99	<	7.409	0.68	High (+) correlation	Significant
8.1.2 Housekeeping	63	1.99	<	4.437	0.49	Moderately (+) correlation	Significant
8.1.3 Bar & Bev	63	1.99	<	4.046	0.45	Moderately (+) correlation	Significant
8.1.4 Front Office	63	1.99	<	3.610	0.41	Moderately (+) correlation	Significant

Table 13 shows that the 7% level of significance with 63 degrees of freedom, the critical value of Food Production, Housekeeping, Bar and Beverage, and Front Office is 1.99 is less than the computed value. Therefore, there is a high relationship in Food Production and while moderately significant relationship in Housekeeping, Bar and Beverage, and Front office. Since the critical value is less than the computed value, the null hypothesis is rejected.

There is a significant relationship between the level of sufficient opportunities given to the learners during virtual laboratory classes and the level of competencies required per course for the students of BS in Hospitality Management.

The analyzed data shows that the level of support through sufficient opportunities provided to the students during virtual laboratory classes will have a direct influence on the achievement of the competencies set for each of the course. As Watts et al. (2022) suggests in his recent study, the support in terms of time management, critique of instruction, preparation for laboratory work and availability of teachers for help affect the performance of every student in a virtual or remote laboratory setup. Laziness and procrastination also manifest in students that receives lesser support. For Hospitality management students, the nature of education dictates the need for practical experience in laboratories (Choi et al., 2021). This is very evident as the professional courses under the program of Hospitality Management require on-site laboratory simulations.

### 7.2. In terms of Bachelor of Science in Tourism Management

**Table 14**  
*Significant relationship between the level of sufficient opportunities given to the learners during virtual classes in terms of Bachelor of Science in Tourism Management*

Article	Degree of Freedom	Critical Value	Relationship	Computed value (t)	Pearson Value (r)	Description	Interpretation
8.2.1 Tour & Travel	63	1.99	>	-0.175	-0.02	Very low (-) correlation	Not Significant
8.2.2 Phil. Gastro Cuisine	63	1.99	>	0.487	0.06	Very low (+) correlation	Not Significant

Table 14 shows that with the 7% level of significance with 63 degrees of freedom, the critical value of Tour and Travel and Philippine Gastronomical Cuisine is 1.199 is more than the computed value. Therefore, there is a very low (-) relationship between Tour and Travel while very low (+) relationship in Philippine Gastronomical Cuisine. Since the critical value is greater than the computed value, the null hypothesis is accepted. There is no significant relationship between the level of sufficient opportunities given to the learners during virtual laboratory classes and the level of

competencies required per course for the students of BS in Tourism Management.

The data shows that the students of the program Tourism Management are not affected by the level of sufficient opportunities they receive during the virtual laboratory classes. Tourism Management students may still find virtual laboratories as a good modality for achieving the desired competencies of the courses Tour & Travel and Philippine Gastronomical Tourism. In a study made by Vanicek et al. (2021), the student respondents who are taking the same program agree that the challenges brought by the pandemic in education will not affect their intention to study Tourism Management. More than 80% of the respondents of the said study are still positive in doing their online activities relevant to Tourism Management.

## CONCLUSIONS

In conclusion, this study delved into the perceptions of students within the College of International Tourism and Hospitality Management, particularly examining the skill gaps arising from the reduction of onsite laboratory classes. The identification of competencies and opportunities within these classes was pivotal in uncovering these gaps. Notably, results underscore the necessity for targeted interventions in specific courses—such as Food Production, Housekeeping, Bar and Beverage Management, and Front Office—within the Bachelor of Science in Hospitality Management program, as indicated by significant correlations. In response to these findings, the proponents will develop guidelines aimed at addressing these identified gaps. Conversely, students enrolled in the Tourism Management program responded positively to the sufficiency of opportunities provided for their learning.

## RECOMMENDATIONS

Further studies are necessary to support identified skill gaps and enhance guidelines for addressing reduced on-site laboratory activities.

Duplication across programs and exploration of technologies are recommended.

## REFERENCES

- Almahasees, Z., Mohsen, K., & Amin, M. O. (2021). Faculty's and students' perceptions of online learning during COVID-19. *Frontiers in Education*, 6. <https://doi.org/10.3389/educ.2021.638470>
- Choi, J. J., Robb, C. A., Mifli, M., & Zainuddin, Z. (2021). University students' perception to online class delivery methods during the COVID-19 pandemic: A focus on hospitality education in Korea and Malaysia. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 29, 100336. <https://doi.org/10.1016/j.jhlste.2021.100336>
- Destino, J. F., & Cunningham, K. (2020, August 4). At-Home colorimetric and absorbance-based analyses: An opportunity for inquiry-based, laboratory-style learning. *Journal of Chemical Education*, 97(9), 2960–2966. <https://doi.org/10.1021/acs.jchemed.0c00604>
- Joshi, V.A., & Gupta (2021), Assessing the impact of the COVID-19 pandemic on hospitality and tourism education in India and preparing for the new normal. [https://www.researchgate.net/publication/353584358\\_Assessing\\_the\\_impact\\_of\\_the\\_COVID-19\\_pandemic\\_on\\_hospitality\\_and\\_tourism\\_education\\_in\\_India\\_and\\_preparing\\_for\\_the\\_new\\_normal](https://www.researchgate.net/publication/353584358_Assessing_the_impact_of_the_COVID-19_pandemic_on_hospitality_and_tourism_education_in_India_and_preparing_for_the_new_normal)
- Kapilan, N., Vidhya, P., & Gao, X. Z. (2020, December 1). Virtual laboratory: A boon to the mechanical engineering education during Covid-19 pandemic. *higher education for the future*, 8(1), 31–46. <https://doi.org/10.1177/2347631120970757>
- Korlat, S., Kollmayer, M., Holzer, J., Lüftenegger, M., Pelikan, E. R., Schober, B., & Spiel, C. (2021, March 30). Gender differences in digital learning during COVID-19: Competence beliefs, intrinsic value, learning engagement, and perceived teacher support. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.637776>
- Marton, F., & Booth, S. (2013). *Learning and awareness*. New York: Routledge.
- Mojica, E. R. E., & Upmacis, R. K. (2021). Challenges encountered and students' reactions to practices utilized in a general chemistry laboratory course during the COVID-19 Pandemic. *Journal of Chemical Education*, 99(2), 1053–1059. <https://doi.org/10.1021/acs.jchemed.1c00838>



Newton, G., & Martin, E. (2013). Research and teaching: blooming, SOLO taxonomy, and phenomenography as assessment strategies in undergraduate science education. *Journal of College Science Teaching*, 043(02). [https://doi.org/10.2505/4/jcst13\\_043\\_02\\_78](https://doi.org/10.2505/4/jcst13_043_02_78)

Simonds, T., & Brock, B. (2015, January). Relationship between age, experience, and student preference for types of learning activities in online courses. *The Journal of Educators Online*, 11(1). <https://doi.org/10.9743/jeo.2014.1.3>

Sonbuchner, T. M., Mundorff, E. C., Lee, J., Wei, S., & Novick, P. A. (2021). Triage and recovery of STEM Laboratory Skills. *Journal of Microbiology & Biology Education*, 22(1). <https://doi.org/10.1128/jmbe.v22i1.2565>

Stenson, M. C., Fleming, J. K., Johnson, S. L., Caputo, J. L., Spillios, K. E., & Mel, A. E. (2022). Impact of COVID-19 on access to laboratories and human participants: Exercise science faculty perspectives. *Advances in Physiology Education*, 46(2), 211–218. <https://doi.org/10.1152/advan.00146.2021>

Tria, J. Z. (2020, June 3). The COVID-19 pandemic through the lens of education in the Philippines: *The New Normal. International Journal of Pedagogical Development and Lifelong Learning*, 1(1), ep2001. <https://doi.org/10.30935/ijpdll/8311>

Vaniček, J., Šenková, A., & Jarolímková, L. (2021). Tourism and the COVID-19 global pandemic – analysis of opinions of czech and slovak tourism students. *SHS Web of Conferences*, 92, 01054. <https://doi.org/10.1051/shsconf/20219201054>

Watts, J., Crippen, K. J., Payne, C., Imperial, L., & Veige, M. (2022). The varied experience of undergraduate students during the transition to mandatory online chem lab during the initial lockdown of the COVID-19 pandemic. *Disciplinary and Interdisciplinary Science Education Research*, 4(1). <https://doi.org/10.1186/s43031-022-00055-0>

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