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Learning delivery modalities and academic performance at this time of pandemic among selected psychology students of st. dominic college of Asia: a comparative study

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Abstract

This study aimed to determine the academic performance of selected Psychology students of St. Dominic College of Asia based on the learning modalities deployed during the lockdown period due to the Covid-19 Pandemic. A total of 50 respondents participated in this study. Based on academic practice, the institution has 3 academic periods as Prelim, Midterm and Final Period. The prelim period deployed full Face-to-Face Learning Modality while the Midterm Period used a Blended Learning Modality which is a combination of Face-to-Face Learning Modality and Online Learning Modality. Weighted average per period was used as the basis in the Academic Performance. Results showed that a Blended Learning Modality and Full Online Learning Modality is significantly higher in terms of a weighted average than Face-to-Face Learning Modality. Data were analyzed using SPSS. Specifically, a T-test for Independent Samples was used to check significant differences between two groups and One-Way Analysis of Variance for more than two groups and It also resulted that demographic profiles such as sex(female), number of units and subjects enrolled has nothing to do with academic performance across all types of learning modalities. Lower year levels significantly performed better than higher year levels across all types of learning modalities.

Keywords: Academic Period; Face-to-Face Learning Modality; Blended Learning Modality; Full Online Learning Modality; Academic Performance

1. Introduction

Covid-19 is a current global concern that each country is striving to face (Abdullah et al., 2021). The said concern is classified as a global Pandemic in which all areas of economics and organizations were affected at different levels of severity (Ali et al., 2021). Until now, health protocols and medical interventions have frontline solutions in each country. But the said solution is not sustainable since there is a need for innovations and medical advancements in order to combat this Pandemic.

2. Literature Review

Academic or educational institution is one of the severely affected by this pandemic. According to an article entitled Pandemic school closures: risks and opportunities" published last May of 2020; school closures were reported across 188 countries. Here in the Philippines, based on the article published by [2]CNN Philippines last September 9, 2020, there were 748 private schools that suspended their operations due to Pandemic. This suspension of classes severely affected 3,233 teachers and 40,345 learners. To survive the academic operations of any academic institution at this time of crisis, schools deployed an online learning modality so that students can still enroll and take online classes and there will still be jobs available for teachers.

Face-to-Face Learning Modality is a traditional set-up of class learning wherein students and teachers are in a room physically doing some discussions and interactions. Through class lectures, the context of the topic or subject is directly delivered, and students are getting involved in the teaching-learning

process. Activities in the classroom can be served not just as a learning experience but also as socialization for students.

Face-to-Face Learning Modality has advantages and disadvantages. The advantages of the said learning modality are that the lecturer supplies important supplementary notes that are essential for you to pass the exam, sharing and comparing of notes can be done by the classmates, questions are answered in real-time which means that there is no need for you to wait for some time to receive a feedback or response, and assignments are handed personally which means that there is no need for you to worry on what school should be done at home. However, there are some disadvantages such as the lecturer has limited time in the class, not all questions can be entertained by the teacher during the class period, cost in terms of travelling to school back and forth, class schedule variations including idle periods between class schedules.

According to the study conducted by Kemp & Grieve (2014), there is an online preference in completing activities by the students however performance between traditional and online learning is not significantly different. Their study concluded that face-to-face and online learning modality is at a similar level in terms of academic performance. Discussion is being done face-to-face as and written activities are being done online as a preference. Carini et al., in 2006 stressed out that there is a positive association between student engagement in face-to-face class and performance in academics.

Blended learning modality or the combination of face-to-face classes and online classes is also being used by some colleges and universities across the globe. Students' exposure to different learning modalities can help them to become flexible in learning activities of the education. The combination of face-to-face and online learning modality which is called blended learning is becoming more known in education sections and it is a trend in a higher academic institution that is being accepted by teachers and professors (Bonk et al., 2006). In Blended learning, students are meeting face-to-face through synchronous communication and interact online as well. It is most commonly a combination of face-to-face learning and internet-based learning (Oliver & Trigwell, 2005). According to Osguthorpe & Graham (2003), the primary objective of blended learning is to find a balance between online learning access and physical interaction of students through face-to-face learning. It is a mix of online and face-to-face activities that has several goals, knowledge access and interaction to both social environments.

Online Learning Modality is the most acceptable learning and teaching strategy at this time of Pandemic of crisis. Across the globe, for academe to continue its operations, they need to be strategic in the learning delivery by means of online. According to Alismail (2015), technology e-learning is a powerful tool that can access information and knowledge directly by the students and it can lead to learning independence as well. It is also a considerable role that teachers play a responsibility to guide the online engagement of students. Through online, there is easy access to education data and information that is important in the academic success of students. According to Ituma in 2011, online learning contributes to the substantial academic experience of students in universities in a variety of countries. However, there is an increase in incorporating online sessions into face-to-face classes in which traditional classes are replaced with online activities.

Chen et al., (2010) stressed that there is an increased engagement and learning among students in their participation in technology learning. Technology is needed so that online engagement of students is possible and reachable. There is better performance when students access materials online via interactive and navigated web pages (Evans et al., 2004).

Time is very important in learning. In online, through asynchronous activities, students have more time to accomplished and develop productive outputs due to considerable time given for accomplishing them. Flexibility on time allows students to be more critical and reflective in online activities which can

lead to an in-depth understanding of the content of course (Robinson and Hullinger, 2008). Motivation plays an outgrowth role in online learning. The study of Salamat et.al., (2018) concluded that online learning provides flexibility in time and motivation to students. They can work independently without the assistance of others. Students are comfortable when they use internet.

Collaboration is also one of the activities being observed in an online learning. There is an improved collaborative process in small group learning in an online environment. There is a positive experience in online meetings where sharing of data, resources, and fieldwork are being done (Baskin, 2001). In the study of Stacey (1999), results show that students learning online was enhanced through online collaborations as part of collaborative distance education of students.

Online learning modalities prove that students can achieve positive academic success in the absence of physical or face-to-face learning. According to the study initiated by Alducin-Ochoa & Vazquez-Martinez (2016). Results show that blended learning model of learning modality has more academic success than face-to-face or traditional learning modality. The study of Ladyshewsky (2004) proves that students in online learning are better than those who are on Face-to-Face learning. This is study based on his comparison among students taking a graduate degree in business.

However, online education is not always a success for students. The study of Davies and Graff in 2005 concluded that the participation and interaction of students in online learning did not result in significantly better performance in academic than those students who participated less in online learning. It is supported in the study of Holley and Oliver (2010) that if students start with insufficiency in knowledge and support in technology, they feel discouraged by the expectations of online study.

The study of Helms in 2014 found out that students who are in online learning modality significantly had lower grades missed more academic opportunities and were more likely to fall compared with students who are in traditional or face-to-face learning modality. Due to some technical constraints and previously taken instructional approaches, initial e-learning experiences failed to live with students' or learner's expectations (Imel, 2002). Comparing face-to-face and online learning modalities, students felt more disconnections from lecturers and classmates and are obliged to do self-directed learning online (Otter et al., 2013).

Student performance between face-to-face learning modality and online learning modality is not significantly different. It also resulted in that gender has nothing to do with performance of online and Face-to-face learning (Paul, Jasmine et.al., 2019). In the study conducted by Sussman & Dutter (2010), there was no difference found between face-to-face learning modality and fully online course in the final grades based on GPA.

The study conducted by Van Schaik et.al. (2003) found out that there is no significant difference between Face-to-Face and Online Learning Modality either test results or attrition rates. Similarly, 27the study conducted by Chen and Zimitat (2004) concluded that Face-to-Face and Online Learning Modality has no significant difference in student outcomes through test scores.

From the literature, this study focused on getting the weighted averages or grades of each student per academiperiodsod such as prelim, midterm and finals. The prelim period deployed a Face-to-Face Learning modality. Midterm period deployed Blended Learning Modality which is a combination of Face-to-Face Learning Modality and Online Learning Modality. Final period used Full-Online Learning Modality. In an online learning modality, leniency is observed, or students are given ample time to accomplish activities and examinations online asynchronously or at their own pace. These different learning modalities were deployed due to the community quarantine brought by Covid-19 Pandemic.

3. Methodology/Materials

3.1 Participants

Based on the compliance of officially enrolled students during second semester (January to May of 2020) of academic year 2019-2020, only 50 Psychology students were qualified to be the respondents of the study where 11 were male psychology students and 39 female psychology students. Compliance means that all subjects enrolled during that term have a corresponding weighted average per period (Prelim, Midterm, and Finals).

This study utilized the academic grades of respondents for prelim, midterm, and finals. Face-to-face learning modality was used during prelim period, blended learning modality which is a combination of face-to-face and online learning was used during a midterm period, and fully online learning modality was used during final period. Each period has 5 weeks.

Respondents were profiled based on (a) sex (male, female), (b) number of units enrolled (above 20 and below 20 units), (c) year level (first year, second year and fourth-year level), and (d) number of subjects enrolled during the term (less than 6 subjects, 6 to 7 subjects and more than 7 subjects).

3.2 Computation of Average

This study utilized the academic grades of respondents for prelim, midterm, and finals. Face-to-Face Learning Modality was used during prelim period, Blended Learning Modality which is a combination of Face-to-Face and Online Learning Modality was used during midterm period, and Full Online Learning Modality was used during final period.

Table 1. Average Grade Per Subject Per Period

Subjects	Units	Prelim Period		Midterm Period		Final Period	
Subject 1	3	88.10	264.30	93.63	280.89	86.75	260.25
Subject 2	3	81.00	243.00	88.00	264.00	91.00	273.00
Subject 3	3	85.00	255.00	91.00	273.00	91.00	273.00
Subject 4	3	89.60	268.80	94.58	283.74	94.09	282.27
Subject 5	5	82.52	412.60	87.84	439.20	86.93	434.65
Subject 6	2	80.00	160.00	80.00	160.00	80.00	160.00
Subject 7	3	88.50	265.50	94.00	282.00	89.50	268.50
Subject 8	3	88.71	266.13	95.00	285.00	98.00	294.00
Total	25		2135.33		2267.83		2245.67
Average			**85.41**		**90.71**		**89.83**

Each period has 5 weeks. Table 1 shows the sample computation of weighted average.

The computation of their per period grade is based on the grade of the subject multiplied by the corresponding units per subject. Weighted average was used to get the performance of each student per period (prelim, midterm, and finals). Averages were collated and underwent statistical analysis.

3.3 Statistical Analysis

This study used within groups and between group analysis. Within group, analysis is to check if there is statistical significance across three types of learning modalities (Face-to-Face, Blended, and Full Online) per sub-level of the demographic profile. The between group analysis is to check if there is statistical significance between sub-level (et.al. male vs female on Face-to-Face Learning Modality).

T-Test for Independent Samples was used to check for significant differences between two groups and One-Way Analysis of Variance was used to check for significant differences for more than two groups. Weighted Mean was also used to compute the average of respondents for each period (Prelim, Midterm, and Finals).

4 Results and Findings

4.1 Descriptive Results

Table 2 shows the average of students per demographic profile for each period (prelim, midterm and finals). Final period which is Face-to-Face Learning Modality obtained the highest average in both male and female respondents, Second Year and Fourth Year level, and less than 6 subjects. Midterm period which is a combination of Face-to-Face Learning Modality and Full Online Learning Modality obtained as the highest average in below and above 20 units, first year level and 6 or more subjects. However, Prelim period which is a Face-to-Face Learning Modality obtained the lowest average across sub-levels of demographic profiles.

Tble 2. Average Grade Per Demographic Profile

Demographic Profile		Prelim	Midterm	Finals
Sex	Male	83.76	88.18	88.70
	Female	86.36	90.59	90.70
Number of Units	Above 20	86.78	90.17	90.16
	Below 20	84.42	89.92	90.39
Year Level	Fourth	82.55	87.86	88.39
	Second	87.43	92.34	92.85
	First	88.25	91.06	90.72
Number of Subjects	More than 7	87.14	90.35	89.99
	6 to 7	85.32	89.96	90.66
	Less than 6	84.19	89.71	90.18

4.2 Within Group Results

Table 3 shows the test of significant within group per demographic profile. This would mean that each sublevel of each demographic profile was statistically analysed to check if there is a significant difference in averages when different learning modalities were used. For male respondents, the computed p-value when Face-to-Face learning modality is compared with Blended Learning Modality is not significant since the computed p-value is greater than .05 alpha level. The same results when Blended Learning Modality is compared with Full Online Learning. This would mean that there are no significant differences in averages when Face-to-Face Learning Modality is compared with Blended Learning and when Blended Learning Modality is compared with Full Online for male respondents. However, the computed p-value when Face-to-Face Learning Modality is compared with Full Online Learning Modality is less than .05 alpha level. This would mean that there is significant difference in the averages. Hence, for male respondents, the average of Full Online Learning Modality is significantly higher than Face-to-Face Learning Modality

For female respondents and other demographic profiles such as Number of Units (Above 20 and Below 20), Year Level (First, Second, and Fourth), and number of subjects (more than 7 subjects, 6 to 7 subjects and less than 6 subjects), the computed p-value for Face-to-Face Learning Modality compared with Blended Learning Modality and Full Online Learning Modality is less than .05 alpha level. This would mean that difference in averages is significant. Hence, the weighted average of Blended Learning Modality and Full Online Learning Modality is significantly higher than Face-to-Face Learning Modality.

Across demographic profiles with their sub-level, the computed p-value is greater than .05 alpha level when Blended Learning Modality is compared with Full Online Learning Modality. This would mean that there is no significant difference in the averages between Blended Learning Modality and Full Online Learning Modality.

Table 3. Test for Significant Difference Within Groups

Demographic Profile		p-value	Post-Hoc Test		
			F2F vs BL p-value	F2F vs FL p-value	BL vs FL p-value
Sex	Male	0.071	0.059	0.037*	0.829
	Female	0.000*	0.000*	0.000*	0.899
Number of Units	Above 20	0.000*	0.000*	0.001*	0.991
	Below 20	0.000*	0.000*	0.000*	0.743
Year Level	Fourth	0.000*	0.000*	0.000*	0.628
	Second	0.000*	0.000*	0.000*	0.680
	First	0.000*	0.001*	0.000*	0.727
Number of Subjects	More than 7	0.000*	0.011*	0.006*	0.820
	6 to 7	0.000*	0.001*	0.000*	0.605
	Less than 6	0.001*	0.004*	0.009*	0.733

**Significant at .05 alpha level; F2F= Face-to-Face; BL= Blended Learning, FL= Full Online*

4.3 Between Group Results

Table 4 shows the test for significant differences between groups. This would mean that in each demographic profile, sub-levels were being compared (et.al. Male vs Female) across learning modalities (Face-to-Face Learning Modality, Blended Learning Modality, and Full Online Learning Modality).

Table 4. Test for Significant Difference Between Groups

Demographic Profile	Face-to-Face p-value	Blended Learning p-value	Full Online p-value
Sex	0.252	0.120	0.164
Number of Units	0.126	0.808	0.824
Year Level	0.001*	0.000*	0.001*
Number of Subjects	0.249	0.860	0.842

**Significant at .05 alpha level*

For the sub-levels of Sex (male vs female), Number of Units (Above 20 and Below 20), and Number of subjects (more than 7 subjects, 6 to 7 subjects, and less than 6 subjects), the computed p-value is greater than .05 alpha level. This would mean that there is no significant difference in averages. However, for Year level, the computed p-value is less than .05 across learning modalities. This would mean that there is significant difference in averages.

Table 5. Post Hoc Test for Year Level

Learning Modality	Year Level		
	First vs Second p-value	First vs Fourth p-value	Second vs Fourth p-value
Face to Face	.631	.000*	.006*
Blended	.238	.001*	.000*
Full Online	.071	.020*	.000*

**Significant at .05 alpha level*

Based on the Post Hoc Test, the computed p-value when Fourth Year Level is compared with First- and Second-Year Level is less than .05 alpha level. This would mean that there is significant difference. Hence, the average across different learning modalities for Fourth Year Level respondents is significantly lower compared to First- and Second-Year Level respondents.

Based on the results shown in table 5, Blended Learning Modality resulted in higher academic grades than Face-to-Face Learning Modality. This would mean that, through Blended Learning Modality, academic performance based on average was significantly increase in comparison with Face-to-Face Learning Modality. In the same manner, Full Online Learning Modality resulted in higher academic grades than Face-to-Face Learning Modality. Academic Performance was significantly increase when Full Online Learning Modality was introduced to respondents in comparison with Face-to-Face Learning Modality. Blended Learning Modality is not significantly different from Full Online Learning Modality. This would mean that Blended and Full Online Learning Modality increase more the academic performance than the traditional Face-to-Face Learning Modality.

Although the study found out that Blended Learning Modality and Full Online Learning Modality are better than Face-to-Face Learning Modality in terms of academic performance, the result that shows any significant difference between sub-levels of each demographic profile across different learning modalities. This would mean that sex, number of units and subjects enrolled have nothing to do with learning modalities in increasing the academic performance. However, the study found out that lower year respondents resulted in significantly higher academic performance across learning modalities (Face-to-Face Learning Modality, Blended Learning Modality and Full Online Learning Modality) than higher year respondents. This would mean that lower year levels perform better than higher year levels across learning modalities.

Full Online Learning Modality is only the feasible strategy at this time of Pandemic due to social distancing policies as one of the mandated health protocols of the World Health Organization. Although literature and studies say that online learning modality is not different from Face-to-Face Learning Modality when it comes to academic performance (Davies and Graff, 2005; Helms, 2014; Holley and Oliver, 2010; Imel, 2002; Otter et al., 2013; Chen and Zimitat, 2004; Paul, Jasmine et.al., 2019; Sussman & Dutter 2010; and Van Schaik, Barker & Beckstrand, 2003), the findings of the study support that full-online learning modality is better and efficient compared with face-to-face learning modality (Ituma, 2011; Chen et al., 2010; Evans et al., 2004; Alismail, 2015; Robinson and Hullinger, 2008; Baskin, 2001; Salamat, et.al., 2018; and Stacey, 1999). Also, the results of the study support the findings of Paul, Jasmine et.al., (2019) that gender has nothing to with academic performance in Face-to-Face Learning modalities.

With these findings, Blended Learning Modality and Full Online Learning Modality can facilitate academic success for students in times of crisis or pandemics. Or even the absence of a pandemic, considerable time and student's and pacing, self-directed learning by means of academic and learning independence can help students to achieve success in their academic performance. At the time of technological revolution, the pedagogical shift to online learning can be a good way to deliver education to our students.

5. Conclusion

Based on the conduct and results of the study, the researcher concluded that Blended Learning Modality and Face-To-Face Learning Modality are more effective in increasing academic performance than Face-to-Face-Learning Modality. And regardless of whether blended or fully-online learning

modality, the study found no significant difference in academic performance. Sex, number of units and subjects enrolled has nothing to do with a academic performance across different learning modalities.

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