

Onsite Learning and Flexible Learning Modalities: A Comparative Analysis of Students' Academic Performance

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Abstract— In the advent of the CoViD-19 pandemic, the Philippine's academic sector shouldered the responsibility to lead the country to its transition towards the new normal. As the cases surged to higher height and the death tolls rising above the line, restrictions were strictly imposed and classes were put-off. The bigger responsibility for the government now is to ensure the learning continuity of students despite the crisis. The new normal supplanted the physical engagements of teachers and students with virtual learning environment. The shift towards flexible learning has set in opportunities and challenges within the system. The integration of this new mode of instruction was confronted by numerous criticisms in terms of its long-term effect to students' academic ability. For purposes of providing empirical evidence on this context, this study will provide an analysis on the impact of flexible learning to college students with special emphasis on their academic performance. This study utilized document analysis, grounded theory and survey as its methods.

Keywords— Flexible learning; Academic Performance.

I. INTRODUCTION

In the Philippines, education has been receiving sufficient attention from the government and is set as one of the priority sectors of the government along with health, agriculture and public works. The educational system in the country is comparable with other traditional practices in other neighboring countries. The typical set-up involves the physical engagements of teachers and students within the corners of their classrooms where activities and learning assessments are administered onsite.

Conversely, in the advent of the CoViD-19 pandemic where mobility and public activities were put into different levels of restriction, countries around the world have been confronted with much complications in the transition towards the "new normal". There are many adjustments and fine tunings needed to obtain a perfect scheme most applicable for the culture and conditions of a country.

Just as other countries did, the Philippines struggles in terms of socio-economic mobilities brought by the imposed community quarantine, restricting the movement of the population except for necessary work and health circumstances. Additional lockdown restrictions mandated the temporary closure of non-essential shops and businesses. At this scenario, many business establishments had been closed, economic recessions began, limited vehicular transportations were imposed, and country's education system began to

decline. The country's education sector was pushed to its limits and was wedged by the imposed restrictions and community quarantines. The conduct of on-site classes in schools have been suspended as the CoViD-19 cases surged to its peak.

In compliance to the official directive of the Inter-Agency Task Force (IATF), academic institutions nationwide were pushed to adopt the so called "flexible learning modalities" to ensure the learning continuity of students. Nothing will ever prepare a country for this sudden change of learning method, especially in the Philippines setting. Even now, 2 years pass since the upsurge of the pandemic, the country is still on the process of adopting to the new requirements of the new normal.

Higher Education Institutions (HEIs) nationwide have turned to different learning modalities to ensure the learning continuity of students. There are various platforms to aid teachers in providing the needed learnings to students i.e. Learning Management System (LMS), modular approach, etc.

There are several factors to consider in choosing a platform that will fit the need of an academic institution i.e. teachers' and students' characteristics and their technical capacity among others.

Modular approach is considered to be one of the most termed modalities in the country, especially on local communities where the internet connection does not warrant the conduct of online/synchronous classes. In the modular approach, students are provided with chunk -size of information via learning packets/modules. Learnings concepts are integrated in the packets with their corresponding activities and assessments. There are various advantages of this approach, convenience ranked first. Students study their lessons at their own pace and academic pressure is lower compared to the on-site conduct of classes. Also, this approach appears to be more cost-efficient, especially for students travelling a distance to reach their schools.

This approach is considered to be more effective in the teaching – learning process compared to traditional methods (Zamir, 2014). This in the same way offers an environment where students learn independently and where feedbacks are provided regularly for further enhancement.

The emergence of the so called "new normal" opens the door of digital age. Technology now supplanted the physical classrooms in schools, the printed copy of books and even

teachers’ effort are reduced significantly. Technology has unlocked the potential of every country through the education sector to provide students with something greater and eventually lead them towards global fitness.

The power of technology via e-learning is now being imbibed worldwide to continuously bring the essence of education at the forefront of every student’s door. There are a number of technological platforms that schools make use nowadays. In the Philippine setting, Learning Management System (LMS) and video conferencing tools are used by teacher to aid them in the conduct of classes and provide them extra advantage in terms of time and effort.

Nonetheless, the conduct of online classes requires the courage to bridge the learning barriers that may arise from the learning system itself. Few among these barriers are demographic predicaments, flexibility, technological capacity of both teachers and students and others depending on the unique features of the implementing agency. As they say, there is nothing more than the face-to-face classes, however, the decades passed have already foreseen this shift that no nation can ever divert from.

Basilan as an island province in Mindanao struggled like any other provinces in the country. The struggle was made even intense as the conduct of online learning entails accessibility to ICT paraphernalia and the availability of active internet connection among others. Since the Province has limited ICT paraphernalia to use from and the strength of internet connection does not actually warrant the use of online learning tools; most academic institutions in the Province turned to offline tools as alternative to the conduct of on-site classes. Modular approach in this instance gained prominence. While there are some academic institutions, specifically graduate schools offering programs in the master’s and doctorate make use of online tools to conduct classes, still most preferred modular as their mode of instruction.

Modular approach is not a one-fits-all scheme that will provide students with 100% rate of effectiveness in terms of attaining the learning outcomes. This approach has posed both opportunities and challenges to list to. Unlike online platforms, modules are handier and more accessible for students’ use, especially for those living in far-flung communities where internet connection still remains a pressing problem. However, it can be noted that behind the positive feedbacks are the criticisms on its learning effectiveness as there is lesser teacher-student engagements compared to the online synchronous platforms.

It has been more than 2 years now since the implementation of flexible learning modality in its various forms i.e. online and offline; synchronous and asynchronous. Each learning platform has its own advantages and disadvantages to begin with. This study was conducted in response to the call for further studies in this area, especially in Basilan Province where there exists limited to no studies comparing the impact of flexible learning modalities and the traditional on-site classes vis-à-vis students’ academic performance. There are different factors to consider in measuring the impact of a learning scheme, however for the

purpose of this study, students’ academic performance will be used as the indicator for measuring its impact to the students.

The results of this research endeavour will determine the efficacy of flexible teaching platforms and on-site classes to students’ academic performance. Specifically, this aims to answer the following research questions:

1. What is the impact level of flexible learning among the college students of Basilan State College?
2. Is there a significant difference between flexible learning and face – to – face classes in terms of students’ academic performance?
3. What are the recommended interventions for the conduct of flexible learning and eventually for the limited face – to – face classes?

II. METHODOLOGY

The researcher adopted the descriptive – survey method to gather the necessary data needed for this study. The use of textual analysis and grounded theory were similarly utilized for purposes of providing further information on the concept. The sampled data would be the college students of Basilan State College through the located mode of validations under the documentations made by the researcher by means of survey questionnaire analyses. There are 357 respondents who responded to the call for survey made by the researcher. The computed the school’s sampling size using the confidence level and margin of error. The formula is shown below:

$$\text{Sample size} = \frac{z^2 \times p(1-p)}{e^2} \div \left(1 + \frac{z^2 \times p(1-p)}{e^2 N} \right)$$

z – Score under the confidence level of 95 %, which is 1.96.

p – SD: 0.5 (50%)

e – Margin of error, 0.05 (5%)

Based on the evidence made by the researcher through Document Analysis, Grounded Theory and Thematic Analysis, and One – Shot Survey, this paper will discuss the comparison of flexible learning approaches versus the face – to – face classes together with the correlation of the flexible learning with the current set up of the students’ academic performance.

The researcher will use the self – made survey questionnaire, items of which were validated through computing the Cronbach’s Alpha to test the instrument’s reliability. Below is the table for internal consistency:

Cronbach’s Alpha	Internal Consistency
$a \geq 0.9$	Excellent
$0.9 > a \geq 0.8$	Good
$0.8 > a \geq 0.7$	Acceptable
$0.7 > a \geq 0.6$	Questionable
$0.6 > a \geq 0.5$	Poor
$0.5 > a$	Unacceptable

The researcher conducted a pilot testing on the research instrument before proceeding to the final administration of questionnaire to target respondents.

The test of reliability was computed after pilot testing, once the alpha did not reach the acceptable internal consistency, the researcher then modified the item for retesting. Once the alpha reached the minimum acceptable internal consistency, the researcher then proceeded to the conduct of survey to the target sample of the study. The formula for the Cronbach’s Alpha is shown below:

$$\alpha = \frac{Nc}{v + (N - 1)c}$$

Where: N is the number of items.
c is the average inter – item covariance among the items.
v is the average variance.

III. PRESENTATION OF RESULTS

Below are the proportions of the weighted scale responses of the 357 college students of Basilan State College for the impact level of the flexible learning:

Questions	5 – Point Weighted Scale (With Frequency Percent)
The written and performance task is in demand for compliance.	5 – Highly Impacted (43.6) 4 – Impacted (43.6) 3 – Moderately Impacted (23) 2 – Slightly Impacted (1.3) 1 – Less Impacted (1.3)
The academic grades given by the professors are considerably changing.	5 – Highly Impacted (37.4) 4 – Impacted (33) 3 – Moderately Impacted (25.6) 2 – Slightly Impacted (3.5) 1 – Less Impacted (0.4)
The use of blended learning like online classes is in demand for proactive usage.	5 – Highly Impacted (41) 4 – Impacted (30.4) 3 – Moderately Impacted (18.1) 2 – Slightly Impacted (7.9) 1 – Less Impacted (2.6)
Requirements had changed due to the most essential learning competencies.	5 – Highly Impacted (34.8) 4 – Impacted (41) 3 – Moderately Impacted (15.4) 2 – Slightly Impacted (6.6) 1 – Less Impacted (2.2)
Several webinars/symposia conducted about pandemic were effectively in demand in relation to online classes.	5 – Highly Impacted (45.4) 4 – Impacted (28.2) 3 – Moderately Impacted (16.3) 2 – Slightly Impacted (9.3) 1 – Less Impacted (0.9)
The professors are showing appropriate power point preparations for the learners.	5 – Highly Impacted (33.5) 4 – Impacted (39.6) 3 – Moderately Impacted (21.1) 2 – Slightly Impacted (5.3) 1 – Less Impacted (0.4)
The professors are showing appropriate video presentation.	5 – Highly Impacted (39.2) 4 – Impacted (32.6) 3 – Moderately Impacted (21.1) 2 – Slightly Impacted (5.3) 1 – Less Impacted (1.8)
The professors are preparing performance task for the online learners.	5 – Highly Impacted (28.6) 4 – Impacted (30.4) 3 – Moderately Impacted (31.3) 2 – Slightly Impacted (9.3) 1 – Less Impacted (0.4)
The professors are participative in the instructions/activities during the class.	5 – Highly Impacted (24.7) 4 – Impacted (36.1) 3 – Moderately Impacted (31.7) 2 – Slightly Impacted (7) 1 – Less Impacted (0.4)
The college students are participative in answering	5 – Highly Impacted (44.1) 4 – Impacted (30.8)

learning activity made by the teacher.	3 – Moderately Impacted (15) 2 – Slightly Impacted (7.9) 1 – Less Impacted (2.2)
The college students are engaged in online innovative learning activities (e.g. Quizzis, Socrative, mentimeter etc.).	5 – Highly Impacted (25.6) 4 – Impacted (32.2) 3 – Moderately Impacted (33.5) 2 – Slightly Impacted (7) 1 – Less Impacted (1.8)
The college students are actively submitting their performance tasks.	5 – Highly Impacted (27.3) 4 – Impacted (32.6) 3 – Moderately Impacted (31.7) 2 – Slightly Impacted (6.6) 1 – Less Impacted (1.8)
The professors are continuously attending online trainings for instructional deliveries.	5 – Highly Impacted (28.2) 4 – Impacted (48.5) 3 – Moderately Impacted (16.3) 2 – Slightly Impacted (6.6) 1 – Less Impacted (0.4)
The professors are imbibing the learning from the trainings attended online.	5 – Highly Impacted (27.3) 4 – Impacted (46.7) 3 – Moderately Impacted (18.9) 2 – Slightly Impacted (5.7) 1 – Less Impacted (1.3)
The professors are successfully applying the instructional delivery strategies to the learners (eg. Differentiated instructions, Multiple Intelligence, Concrete – Pictorial – Abstract, Cooperative Learning)	5 – Highly Impacted (21.1) 4 – Impacted (58.1) 3 – Moderately Impacted (15) 2 – Slightly Impacted (4.4) 1 – Less Impacted (1.3)
The professors implement the student – centered online learning.	5 – Highly Impacted (32.2) 4 – Impacted (48) 3 – Moderately Impacted (12.3) 2 – Slightly Impacted (7) 1 – Less Impacted (0.4)
The professors give appropriate assessment tools for the learners.	5 – Highly Impacted (19.8) 4 – Impacted (31.7) 3 – Moderately Impacted (38.3) 2 – Slightly Impacted (7) 1 – Less Impacted (3.1)
The professors are giving remediation.	5 – Highly Impacted (24.7) 4 – Impacted (44.5) 3 – Moderately Impacted (22) 2 – Slightly Impacted (7) 1 – Less Impacted (1.8)
The college students are reflective from their assessed performance in their classes.	5 – Highly Impacted (37.4) 4 – Impacted (31.3) 3 – Moderately Impacted (17.2) 2 – Slightly Impacted (12.8) 1 – Less Impacted (1.3)
The college students are improving from their performance.	5 – Highly Impacted (26.9) 4 – Impacted (41.9) 3 – Moderately Impacted (21.6) 2 – Slightly Impacted (7) 1 – Less Impacted (2.6)

To determine the impact of flexible modalities to students’ academic performance, the researcher obtained the General Weighted Average (GWA) of students which is shown below:

Flexible Learning		
	F	%
Excellent	145	41
Very Good	75	21
Good	48	13
Satisfactory	45	13
Poor	44	12
	357	100

On-site Classes		
	F	%
Excellent	124	35
Very Good	15	4
Good	76	21
Satisfactory	88	25
Poor	54	15
	357	100

Below is result of the T – Test conducted to determine if there is a significant difference between the flexible and on-site classes:

T-test	
Alpha Level	0.05
Degrees of Freedom	712
Critical Value	1.96
Decision Rule	If <i>t</i> is greater than or equal to 1.96, reject the null hypothesis, but if <i>t</i> is less than 1.96, accept the null hypothesis.
Computed <i>t</i>	2.88
Decision	Reject the Null Hypothesis
Remarks	There is a significant difference between flexible learning and face to face classes of Basilan State College.
Test for Correlation	
Alpha Level	0.05
Correlating Variables	Flexible Learning – Academic Performance
Critical Value	26.30
Decision Rule	If χ^2 is greater than or equal to 26.30, reject the null hypothesis, but if χ^2 is less than 26.30, accept the null hypothesis.
Computed Chi – Square (χ^2)	30.08
Decision	Reject the Null Hypothesis
Remarks	There is a significant impact/relationship of the flexible learning to the academic performance of the college students in Basilan State College.

Interpretation and Analysis:

Results of this study show that there is a significant difference between the flexible and on-site learning as reflected in the T-test conducted. Moreover, the measurement of correlation suggests that there exists a significant correlation between the conduct of flexible learning to students’ academic performance.

Majority of the respondents agreed that flexible learning has highly impacted their academic performance, both in the pulse survey of the 5 – point weighted scale and in the Chi – Square Test of Independence, deciding to reject the null hypothesis.

There is an improvement or remarkable changes in the new normal set – up when it comes to flexible learning as compared to the on-site learning. Result of the T – Test conducted rejected the null hypothesis.

IV. OTHER RECOMMENDATIONS

The following recommended are established as follows:

1. Flexible learning modalities can be related to Japan’s Kumon Method. This method is used to attend and adapt learning to the rhythm of each student. Aspects of this method may be integrated when revisiting the curriculum of academic courses. The integration of this method to the

curriculum will help maximize the learning potential of students via self-learning, the ability to concentrate, and the habit of study through a series of personalized activities that are carried out daily.

2. Conduct relevant seminar/trainings to faculty members vis-à-vis online and offline technologies is key to improving teacher’s ability to maximize the use of technology for both flexible learning and even on-site classes. This can also be used for remote teaching and learning. Moreover, sessions on designing learning that keeps students’ engagement in remote instruction may also be considered.
3. Future studies may evaluate other factors/indicators to measure the impact of flexible learning to students.

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