

Offline Modular Learning in a Public School System: Its Perceived Effects on School Operations

Rowena F. Panol^{*1}, Ariston G. Vasquez², Dennis G. Caballes³, Marianne R. Valdez⁴

^{*1}Narra Integrated School, Narra, Palawan, Philippines

²Palawan State University, Palawan, Philippines

³De La Salle – College of Saint Benilde, Manila, Philippines

⁴Narra Integrated School, Narra, Palawan, Philippines

Abstract

This study delved into offline modular learning in a public school system and its effects on school operations. One hundred thirty-one Grade 11 students, parents, and forty-one school personnel of Narra National High School, Palawan, Philippines were identified as the respondents through stratified random sampling technique. This inquiry utilized a quantitative as well as qualitative design using a researcher-made questionnaire and an interview form as an instrument for acquiring data. Weighted mean was employed to treat the gathered data and the responses from the interview were coded and analyzed. Results of the study disclosed that the level of effectiveness of offline modular learning on school operations as perceived by the students, school personnel, and parents was effective. Moreover, the identified effects of offline modular learning were affecting the module preparation, printing, and distribution and were found to be highly affecting the school expenses. Conversely, some issues and concerns from students, school personnel, and parents with offline modular learning were identified. Accountability of gadget use, access to stored files, health effects, manual operation of gadgets, and inclusion of complex concepts were the most common concern expressed by students with offline modular learning. School personnel asserted that their common concerns with offline modular learning were the quality and specifications of the tablets/gadgets, the technical aspect, the delivery of lessons and the completion of tasks, and the parents' unwillingness. While parents' concerns about offline modular learning centered on students' loss of concentration, the quality and durability of the gadgets, students' understanding of the lesson, learners' interest, and responsibility for the gadgets. Considering the results, this study recommends an action plan to address the issues and concerns on offline modular learning in a public school system on school operations.

Keywords: Modular distance learning, Offline learning, Public school system, School operations

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I. INTRODUCTION

With the outbreak of the COVID-19 crisis, Philippine academic institutions conducted immense planning to keep up initiatives in delivering high-quality education to avoid losing a semester. The current health condition of the whole world enforced lockdowns, which had a significant impact on teacher-student interactions.

Schools were forced to shift away from traditional face-to-face education to other modes of learning delivery, such as Modular Distance Learning (MDL), which permits students to use Self-Learning Modules (SLMs) in printed or digital format/electronic copy. This learning scheme is generally recognized as an alternative delivery system in which the student and the teacher are separated by distance, time, or both. Digital learning, on the other hand, is not a novel concept in other countries or universities. Many steps have been taken to introduce technology into classrooms as emerging technology stabilizes in educational institutions across the country.

The impact of technology on human existence is enormous, and its significance in all areas of education cannot be ignored. Following the closure of educational institutions, which creates obstacles for students' learning, the involvement of information technologies has increased momentum in the existing pandemic. Technologies are transforming classrooms into more interactive, collaborative, and productive learning environments in which instructions can be customized to students' particular needs, interests, and learning styles. Emerging alternative ways to suit individual variances are concerns that teachers desire to address by incorporating technology to satisfy individuals' information demands.

When the Philippines begins on a new educational technique, several factors were considered. These include teachers' capability, learner situation and background, and the effectiveness of the learning environment. Teachers' daily duties, obligations, and accountability altered significantly as a result of new regulations for distant learning, whether digital online or offline. To answer the developing modalities of education, teachers and students must be equipped with technical knowledge and skills.

Depending on the COVID-19 restrictions and the specific context of the learners in the school or community, schools may use one or a combination of the Learning Delivery Modalities (LDMs) to ensure the continued provision of learning opportunities to learners while safeguarding their health and safety. The offline learning module consists of the usage of learning instructional content resources loaded on tablets, USBs, and cellular phones that learners can use again and over again depending on the subjects. Moreover, offline modular learning is an option for students who own devices but do not have internet access or have been given the privilege to avail the tablets initiated by the school. This strategy attempts to provide a digital link to 21st-century education for those who do not already have access to the internet. Built to deal with the realities of weak or non-existent connectivity and power outages in rural and developing countries. On this background, this study will evaluate the effects of modular learning using the offline digital platform on students' performance and public school operations.

II. RELATED WORK

The current health crisis has enabled us to pave way for Modular Distance Learning (MDL) implementation, which includes the usage of Self-Learning Modules (SLMs) in either printed or digital format/electronic copy, contingent on the learner's context, as well as other learning resources such as Learner's Materials (LMs), worksheets, activity sheets, textbooks, etc. In line with the digital platform, learners can access digital learning materials using a laptop, tablet, PC, or mobile phone either online or offline that will provide them with new, relevant, meaningful learning experiences in the new normal.

Re-evaluating techniques and teaching strategies, as well as strengthening the competencies, are proposed as ways to prepare for the challenges of new normal education [1]. The best thing to do is to provide alternative avenues to education continuity given the situation of schools, even parents and learners [2].

There are learning packages that can be utilized in addition to online learning, which is the same as the correspondence style of distance education. The most popular distance learning approach among learners and parents is learning through printed modules and in digital format [3]. Both for traditional and independent learning, digital learning platforms provide new options and possibilities. Digital learning's new prospects and possibilities in distance education are essential in the development of the teaching and learning process [4].

The contents of teaching materials might be efficiently arranged and gathered using a digital learning platform, and then quickly given to students for effective knowledge management. Interactive features such as chat would be available on digital education platforms and conversation for more two-way dialogue between students and professors, as well as between students themselves [5]. Information technology and the integration of diverse media to improve learners' interests could make teaching more realistic and exciting [6].

In recent years, digital learning has become the most rapidly developing learning mode, and it is expected to become the learning mainstream in the future [7]. Through digital learning, learners could gain richer information outside of the curriculum's instructional materials that can improve the learning effect [8]. A mobile app version of the e-learning resources that can be viewed offline could provide learners with easy accessibility and versatility [9].

In developing countries like the Philippines, not all students can keep up with the fast advances of technology [10]. This could be supported by the identified problem like financial related difficulties and unstable internet connectivity [11]. For instance, according to a survey conducted by Filipino medical students, they experienced difficulties altering to new learning styles because of unreliable internet access [12]. Poor internet connectivity is a major challenge to countries with telecommunication systems [13]. The claims match with the conclusions of a study that current internet bundles in the Philippines are not all created equal in terms of speed and stability [14].

The mentioned issues have moved the education sector to create alternative learning modalities best suited to learners. This led to the formation of offline modular learning that utilizes tablets and smartphones and modules are downloaded to these gadgets to be accessed even without an internet connection.

1.1 Statement of the Problem

The purpose of this study was to determine the effects of offline modular learning on school operations in a public school system. This inquiry specifically sought to answer the following questions.

1. What is the level of the effectiveness of offline modular learning on school operations as perceived by:

1.1 students;

1.2 school personnel; and

- 1.3 parents?
- 2. What are the effects of offline modular learning as to:
 - 2.1 module preparation, printing, and distribution; and
 - 2.2 school expenses?

III. MATERIALS AND METHODS

2.1 Research Design

The study made use of the descriptive research design using both quantitative and qualitative approaches in determining the effects of offline modular learning in a public school system on school operations.

2.2 Respondents

The main source of data came primarily from the responses of one hundred thirty-one (131) Grade 11 students and their parents, as well as the forty-one (41) school personnel who willingly took part in the study in Narra National High School during the school year 2020-2021. They were selected through the stratified random sampling technique using Slovin's formula as $n = N / (1 + Ne^2)$ with a 5% margin of error. The list of Grade 11 students with tablets was the basis of random sampling from the registrar's office. After identifying the desired number of samples, respondents were collected randomly through the fishbowl method.

2.3 Data Tools and Procedures

To answer all the posted problems of the study, the data were obtained through the use of a researcher-made questionnaire with a response format of a five-point Likert scale. The first five-point scale was used to determine the level of the effectiveness of offline modular learning on school operations as perceived by students, school personnel, and parents described as "Very Effective-5", "Effective-4", "Somewhat Effective-3", "Not Effective-2", and "Not Effective at All-1". Another five-point scale was used to determine the effects of offline modular learning on module preparation, printing, distribution, and school expenses described as "Highly Affecting-5," "Affecting-4," "Somewhat Affecting-3," "Not Affecting-2," and "Highly Not Affecting-1". Furthermore, an interview was done to determine the issues and concerns encountered by the respondents regarding offline modular learning in school operations. The gathered data were transcribed and presented in written form for the qualitative part of the study.

The development of the questionnaire in this study was based on consultation with experts in the field of research and the related literature review. To ensure the reliability of the questionnaire, it was subjected to a pre-testing of thirty (30) respondents who were non-participant in the study. Pretesting is a means of ensuring that questions function as intended and are understood by those who will respond to them (Hilton, 2015). The Cronbach's coefficient of the examined questionnaire is 0.721, indicating that it is valid and reliable.

The study was conducted after getting the respondent's consent to participate in the study. The consent form was prepared by the researchers and signed by the respondents indicating their approval to voluntarily participate in the study. Data was obtained through the respondents' responses in the questionnaire and interviews that were scheduled and conducted during the scheduled retrieval and distribution of modules. The researchers guaranteed that all health procedures are thoroughly followed. Also, respondents were assured that their personal information and other related matters would be treated with the utmost confidentiality.

Data Analysis

Weighted mean was applied to determine the level of the effectiveness of offline modular learning on students' performance and school operation as perceived by students, school personnel, and parents. Similarly on the effects of offline modular learning as to module preparation, printing, distribution, and school expenses. Moreover, the researchers conducted an interview relative to the issues and concerns encountered with offline modular learning through the use of distributed tablets initiated by the school. The data gathered were transcribed and presented in written form for the qualitative part of the study.

IV. RESULT AND DISCUSSION

The results obtained are as discussed below

3.1 Level of Effectiveness of Offline Modular Learning on School Operations as Perceived by Students, School Personnel, and Parents

Table 3.1.1 Level of Effectiveness of Offline Modular Learning on School Operations as Perceived by Students

	Weighted Mean	Adjectival Rating
Offline modular learning... helps in completing the learning tasks in science on time.	3.24	Somewhat Effective

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makes the navigation of the Self-Learning Modules (SLMs) easy.	3.15	Somewhat Effective
saves time and offers flexibility in doing the learning tasks.	3.44	Effective
certainly ensures to cope up with missed learning tasks.	3.34	Somewhat Effective
stimulates the ability to think critically in answering questions due to its clear presentation and readability.	3.42	Effective
Composite Mean	3.57	Effective

Table 3.1.1 indicates the level of effectiveness of offline modular learning on school operations as perceived by the students. The students perceived that offline modular learning saves time and offers flexibility in doing the learning tasks, and stimulates the ability to think critically in answering questions due to its clear presentation and readability as effective with weighted means of 3.44, and 3.42 respectively. Meanwhile, they perceived that offline modular learning helps in completing the learning tasks in science on time, makes the navigation of the Self-Learning Modules (SLMs) easy, and certainly ensures to cope with missed learning tasks as somewhat effective with weighted means of 3.24, 3.15 and 3.34 respectively. Results further imply that the students perceived the level of effectiveness as effective with a composite mean of 3.57.

Table 3.1.2 Level of Effectiveness of Offline Modular Learning on School Operations as Perceived by School Personnel

	Weighted Mean	Adjectival Rating
Offline modular learning ...		
helps improve the quality of work.	3.83	Effective
makes the teaching and learning process more effective.	3.71	Effective
saves time and lessens the burden in the reproduction of modules.	4.24	Very Effective
has a positive impact on students' attitudes towards studies.	3.66	Effective
is cost-effective that reduces school expenses.	3.76	Effective
Composite Mean	3.84	Effective

Table 3.1.2 reveals the level of effectiveness of offline modular learning on school operations as perceived by the school personnel. The school personnel perceived that offline modular learning saves time and lessens the burden in the reproduction of modules. as very effective with a weighted mean of 4.24. However, the school personnel perceived that offline modular learning helps improve the quality of work, makes the teaching and learning process more effective, has a positive impact on students' attitudes towards studies, and is cost-effective that reduces school expenses as effective with weighted means of 3.83, 3.71, 3.66, and 3.76 respectively. Results further imply that the school personnel perceived the level of effectiveness as effective with a composite mean of 3.84.

Table 3.1.3 Level of Effectiveness of Offline Modular Learning on School Operations as Perceived by Parents

	Weighted Mean	Adjectival Rating
Offline modular learning...		
is more convenient and accessible.	3.41	Effective
saves time and effort to get the Self-Leaning Modules (SLMs) in the school.	3.46	Effective
aids in the monitoring of the completion of learning tasks without difficulty.	3.14	Somewhat Effective
assists in the review of the content that is not easily understood.	3.27	Somewhat Effective
enhances the awareness of current technologies.	3.42	Effective
Composite Mean	3.43	Effective

Table 3.1.3 presents the level of effectiveness of offline modular learning on school operations as perceived by the parents. The parents perceived that offline modular learning is more convenient and accessible, saves time and effort, and enhances awareness of current technologies as effective with weighted means of 3.41, 3.46, and 3.42 respectively. Meanwhile, they perceived that offline modular learning aids in the monitoring of the completion of learning tasks without difficulty, and assists in the review of the content that is not easily understood as somewhat effective with weighted means of 3.14 and 3.27 respectively. Results further imply that the parents perceived the level of effectiveness as effective with a composite mean of 3.43.

3.2 Effects of Offline Modular Learning as to Module Preparation, Printing, Distribution, and School Expenses

Table 3.2.1 Effects of Offline Modular Learning as to Module Preparation, Printing, and Distribution

	Weighted Mean	Adjectival Rating
Offline modular learning...		
saves time and effort in printing and distribution of the Self-Learning Modules (SLMs).	4.22	Highly Affecting
minimizes cost in terms of Self-Learning Modules (SLMs) printing.	4.27	Highly Affecting
easily tracks the number of the Self-Learning Modules (SLMs) being	4.00	Affecting

distributed.		
ensures that the Self-Learning Modules are readily available throughout the learning process.	4.07	Affecting
helps greatly in the monitoring process of retrieving the Self-Learning Modules (SLMs).	3.85	Affecting
Composite Mean	4.08	Affecting

Table 3.2.1 shows the effects of offline modular learning as to module preparation, printing, and distribution. The facts that offline modular learning saves time and effort in printing and distribution of the Self-Learning Modules (SLMs), and that it minimizes cost in terms of Self-Learning Modules (SLMs) printing were found to be highly affecting with weighted means of 4.22, and 4.27 respectively. On the other hand, the fact that offline modular learning easily tracks the number of the Self-Learning Modules (SLMs) being distributed, ensures that the Self-Learning Modules (SLMs) are readily available throughout the learning process, and helps greatly in the monitoring process of retrieving the Self-Learning Modules (SLMs) were affecting with weighted means of 4.00, 4.07, and 3.85 respectively. Results further indicate that the identified effects of digital modular learning were affecting the module preparation, printing, and distribution with a composite mean of 4.08.

Table 3.2.2 Effects of Digital-Modular Learning as to School Expenses

	Weighted Mean	Adjectival Rating
Offline modular learning...		
helps cut down on the use of paper and ink for Self-Learning Modules (SLMs).	4.41	Highly Affecting
lessens the school expenses and utilizes the remaining budget for other purposes.	4.27	Highly Affecting
requires accountability and responsibility.	4.27	Highly Affecting
must sustain its serviceability.	4.05	Affecting
saves the school's budget and is cost-effective that reduces school expenditures.	4.00	Affecting
Composite Mean	4.20	Highly Affecting

Table 3.2.2 manifests the effects of digital modular learning on school expenses. The facts that offline modular learning helps cut down on the use of paper and ink for Self-Learning Modules (SLMs), lessens the school expenses and utilize the remaining budget for other purposes, and requires accountability and responsibility were found to be highly affecting the school expenses with weighted means of 4.41, 4.27, and 4.27 respectively. Meanwhile, the facts that offline modular learning must sustain its serviceability, and save the school's budget, and be cost-effective that reducing school expenditures were affecting the school expenses with weighted means of 4.05, and 4.00 respectively. Results further reveal that the identified effects of digital modular learning were found to be highly affecting the school expenses with a composite mean of 4.20.

V. CONCLUSION

Guided by the findings of the study, it was found out that the level of the effectiveness of digital modular learning on school operations as perceived by students, parents, and school personnel was effective. The identified effects of offline modular learning were affecting the module preparation, printing, and distribution. The identified effects of offline modular learning were found to be highly affecting the school expenses. The most common concern expressed by students with offline modular learning was the accountability of gadget use, followed by access to stored files, health effects, manual operation of gadgets, and inclusion of complex concepts. The school personnel specified that their common concerns with offline modular learning were the quality and specifications of the tablets/gadgets, the technical aspect, the delivery of lessons and the completion of tasks, and the parents' unwillingness to accept obligations. Parents' concerns about offline modular learning centered on students' loss of concentration, the quality and durability of the gadgets, students' understanding of the lesson, students' interest, and responsibility for the gadgets. The school personnel raised that the tablets/gadgets quality and specifications, technical aspect, delivery of the lesson, and accomplishment of tasks, and parents' unwillingness to accept obligations were their common concerns with offline modular learning. The parents' concern with offline modular learning focused on the loss of concentration of students, gadgets' quality and durability, understanding of the lesson, learners' interest, and responsibility for the gadgets.

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