

MODULAR LEARNING APPROACH: A GLIMPSE AT STUDENTS' SELF-EFFICACY AND ACADEMIC PERFORMANCE IN CHALLENGING TIMES

*Fe Q. Defiño

**Jessamae C. Ducay

***Kristine T. Soberano

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Corresponding Author: Kristine T. Soberano; Email: ksoberano@nonescost.edu.ph; doi:10.46360/globus.edu.220222002

Abstract

The Philippines' educational leaders find the modular learning approach as a feasible solution to continue education. In a modular approach, students learn without, or with minimum motivation and guidance from a teacher. The learners must be able to draw knowledge and accomplish tasks; hence, they need self-efficacy to successfully finish their tasks and responsibilities and achieve high academic performance. This study sought to measure the level of self-efficacy and academic performance of the first-year BSIT students in the modular learning approach. A quantitative descriptive research design was employed. Findings showed that students maintained a high level of self-efficacy despite being left alone in the learning process. Similarly, the level of academic performance is very satisfactory which means that students carried on the tasks in every module and successfully passed the challenges in every module. The correlation between self-efficacy and academic performance of the first-year year BSIT students is $P=.442^{**}$, which means that there is a positive, moderate correlation between the two variables. Looking at the potential advantages that modular learning may bring to the educational system of the country, educational leaders must look deeper into this matter.

Keywords: Academic Performance, Modular Learning, Pandemic Education.

Introduction

The attainment of education and knowledge in a classroom setting is impossible at this time of the pandemic. However, learning is deemed a continuous process, hence; it should be promoted even outside the four corners of the room. The country's educational leaders found modular learning as a feasible tool to realize the country's commitment to continuous learning despite the pandemic. Taneja defined a module as a unit of work in a course of instruction that is virtually self-contained and a method of teaching that is based on the concept of building up skills and knowledge in a discrete. Hence, in a modular approach, students are left to learn on their own, absorb knowledge, and reflect based on the explicitly presented ideas [23]. As a contribution to technology education, modular instruction is widespread and widely accepted individualized learning practice [10]. In an individualized learning scheme, students are left on their own to learn certain competencies without a teacher by their side, hence, they need to have high self-efficacy to succeed.

Self-efficacy refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments. It is the student's self-assurance that he has the skill or knowledge to accomplish a certain task. In the same vein, academic self-efficacy refers to students' assessment of their capability to display and execute learning behavior to pass a task for academic achievement [3],[4].

Lee & Shute [14] and Lee & Stankov [15], agree that students' academic achievement is a 'net result' of their cognitive and non-cognitive attributes. Academic performance is also a result of the sociocultural context in which the learning process takes place [16],[17]. Many studies have concluded that students with high academic self-efficacy tend to display high academic performance in schools where there are teachers to facilitate the delivery of the lessons. However, in the new learning modality scheme, students are confined to their homes to accomplish academic tasks on their own. The modular learning approach has been widely practiced by many progressive countries

* & ***Northern Negros State College of Science and Technology, Philippines.

**Sagay National High School, Philippines.

[9]. Interestingly, there is little knowledge and very few studies, none even in the researcher's locality, which was conducted on the self-efficacy and academic performance of students in the modular approach.

Thus, this paper wants to study the self-efficacy and academic performance of first-year BSIT students in one State College in Negros Occidental, Philippines using the modular learning modality during this time of the pandemic. Past studies concluded that teachers are important parts of education in the classroom setting because they facilitate and mentor students, and they keep their motivation and goals updated every time, hence students' self-efficacy is always in check [26]. It would thus be of interest to learn if students can still keep up their self-efficacy and maintain good academic performance in the modular approach where they are left on their own.

Problem Statement

The global pandemic brought a new normal in the education sector. Students may no longer achieve education in the normal classroom setting; hence, the modular learning approach is deemed appropriate and feasible for the meantime. However, a growing body of research in classrooms has demonstrated that teachers do make a tangible difference in student achievement [27]. In a modular approach, teachers simply provide modules to students to accomplish on their own without a mentor to facilitate and motivate them. The students in the researcher's locality are also facing the same challenge of attaining education and knowledge in the new learning modality. Hence, this study wants to know if the students in the researcher's locality would still maintain a level of self-efficacy and good academic performance in the modular approach. Specifically, this study wants to answer the following research questions:

1. What is the level of Self-Efficacy of the First Year BSIT Students in the Modular learning approach?
2. What is the level of Academic Performance of the First Year BSIT Students in the Modular learning approach?
3. Is there a correlation between the self-efficacy and Academic performance of the First Year BSIT Students in the Modular learning approach?

Self-efficacy

Self-efficacy is the trust that an individual has towards himself that he can perform tasks and responsibilities successfully. In the academic setting, one author argues that students with self-efficacy know how to think of ways to accomplish the given tasks. Hence, students with self-efficacy believe in themselves that they are capable of executing any challenging tasks set before them based on given criteria while displaying good

behavior. Moreover, many studies concluded that self-efficacy is essential for an individual to succeed in his endeavors, for instance, achieving high academic performance [7].

Academic Performance

Caballero et al. [8] defined academic performance as meeting goals, achievements, and objectives beset in a program or course that a student takes. Teachers and educators assess students on their performance through tests and tasks and then express the results through grades. Hence, academic performance is considered as the level of knowledge shown in an area or subject compared to the norm, and it is generally measured using the grade point average. Academic Performance is not only a result of intellectual ability; it is a product of self-motivation, interests, self-esteem, skills, study habits, and personality.

Modular Approach

The modular approach is an alternative learning delivery if certain circumstances do not allow education in a classroom setting. It is one way to show students some solutions to unpredictable circumstances. The modular learning approach is considered one of the biggest contributions of educational technology in recent years because, in this approach, students are given the chance to learn at their own pace [9].

Self-efficacy, Academic Achievement, and Modular Approach

Self-efficacy is essential to one's success and achievement. In terms of academic achievement, students with high self-efficacy have a better learning strategy. However, students who are more pessimistic towards themselves will be less likely to devote more time to studying, hence achieving low academic performance. So to speak, high-self efficacy contributes to high academic performance while low self-efficacy results in low academic performance. However, these studies were conducted in light of a constructive classroom setting where there is mentoring, motivation, and guidance from a teacher. Students believed that their academic self-confidence is inculcated through 'verbal' persuasion and achievements, psychological state, and experiences. Hence, the student's self-efficacy is strengthened through the motivation of a teacher in a classroom setting.

Modular instruction is widespread and widely accepted individualized learning practice [10]. In a modular approach, students are left to manage their learning without a teacher to model or explain the concepts to them. Hence, students' autonomous learning is activated. Piaget, J. [21] maintains that the purpose of education is to develop students to become autonomous learners so they could

construct meaning on their own and not just receive old, recycled ones. When students are left on their own, they will learn how to become responsible for their learning strategies, hence, they will develop the independence that will boost their self-confidence and self-efficacy [25]. Hence, modular learning could help a student develop self-efficacy to achieve more in life, even so in academic settings. In the study conducted by some authors, the researcher found no significant difference in the scores of participants who studied in a classroom setting with a teacher and with those who used the modular learning approach.

Methodology

This study utilized the quantitative-descriptive research design and the method employed is descriptive-correlational. This research method sought to investigate whether a relationship exists between two or more variables, in this study, the correlation between self-efficacy and academic achievement. Even though the correlational study deals with numerical scores, it is sometimes referred to as a form of descriptive research because it

describes an existing relationship between variables without any manipulation of variables [11]. The participants were first-year BSIT students in Northern Negros State College of Science and Technology who are currently studying through a modular approach. A Simple Random Technique was used so every set of an individual in the population will have a fair chance to be sampled [20]. The Mean was used to measure the level of self-efficacy and academic performance, while Pearson's product-moment correlation will be used to measure their correlation.

Research Instruments

To investigate the level of self-efficacy of the participants, the researcher procured a copy of the New General Self-Efficacy Scale created by organizational psychologist Gilad Chen and team in 2001 (shown in Table 1); an 8-item test measures an individual's self-efficacy level. Although there are many measures of self-efficacy, research suggests that Chen and colleagues' New General Measure is more reliable and valid than others.

Table 1
New General Self-Efficacy Scale (Gilad Chen et.al., 2001)

Mean Scale	Verbal Description
4.01- 5.00	Very High
3.01- 4.00	High
2.01- 3.00	Average
1.01- 2.00	Low
0- 1.00	Very Low

The data used to refer to the academic achievement of the respondents are the General Point Average of the participants at the end of the first semester of the

present school year in Northern Negros State College of Science and Technology as shown in Table 2.

Table 2
General Point Average

Mean Scale	Verbal Description
4.01- 5.00	Outstanding
3.01- 4.00	Very Satisfactory
2.01- 3.00	Satisfactory
1.01- 2.00	Fairly Satisfactory
0- 1.00	Failing grade

Results

Table 3 shows the level of Self-Efficacy of the First Year BSIT Students in the Modular learning approach.

Table 3
Level of Self-Efficacy of the First Year BSIT Students in the Modular learning approach.

	N	Mean	Std. Deviation	Interpretation
Self-efficacy	130	3.1077	.64994	HIGH
Valid N (list wise)	130			

It can be gleaned in table 3 that as a whole, the Level of Self-Efficacy of the First Year BSIT Students in the Modular learning approach has a mean of 3.1077, interpreted as HIGH. This may mean to say that the First Year BSIT Students have a high self-efficacy, which may further imply that they could carry on and cope with the modular learning approach as a new learning style. Though some studies suggested that students need constant verbal persuasion in the classroom to teach and their boost one's self-belief [1], which can be termed as social persuasion [3], the success of a social model, like a

mentor, is a crucial factor to observer's belief that he or she can succeed too. Hence, it is deemed more difficult to instill self-efficacy through social persuasion than to subvert self-efficacy. So to speak, in a modular learning approach, there is a greater probability that students may develop their self-efficacy because they become more responsible for their learning.

Table 4 presents the level of Academic Performance of the First Year BSIT Students in the Modular learning approach.

Table 4
Level of Academic Performance of the First Year BSIT Students in the Modular learning approach.

	N	Mean	Std. Deviation	Interpretation
Academic Performance	130	3.1154	.52288	VERY SATISFACTORY
Valid N (list wise)	130			

The table shows that the mean score of the Level of Academic Performance of the First Year BSIT Students in the Modular learning approach is 3.1154, which can be described as Very Satisfactory. Thus, the level of the academic achievement of the students did not decrease despite the new learning style that they are confronted with. It may further imply that the students successfully passed all the tasks and activities without the aid of a teacher. This idea supports the notion that a module makes the learner control over his learning, hence, the learner learns autonomous learner. An autonomous learner proactively takes a role by

independently venturing into the learning process, generating ideas, and availing himself of learning opportunities, rather than simply reacting to various stimuli of the teacher [6], [13]. However, it is important to note that a teacher's role of providing reasonable and constant feedback and monitoring students in modular learning is indispensable and imperative [2].

Table 5 shows the correlation between the self-efficacy and Academic performance of the First Year BSIT Students in the Modular learning approach.

Table 5
The Correlation between self-efficacy and academic performance

	Academic Performance	Self-efficacy
Academic Performance		
Pearson Correlation	1	.442**
Sig. (2-tailed)		.000
N	130	130
Self-efficacy		
Pearson Correlation	.442**	1
Sig. (2-tailed)	.000	
N	130	130

Correlation is significant at the 0.01 level (2-tailed).

Table 5 shows that Academic performance and self-efficacy are significantly correlated with $p < .000 < 0.01$. The correlation score .442** shows that there is a positive moderate correlation between the two variables. This correlation is in light of a modular learning approach. Modular learning enhances autonomous learning among students hence, students learn how to create their learning strategies from authentic learning experiences. A learner in a modular learning style develops independence thus, becoming more decisive, and the self-efficacy is consequently improved [24]. This result was also confirmed in the study of “Comparative Effects of Modular and Traditional Methods in Teaching Analytic Geometry”, which found that students performed better and mastered the subject matter using the modular method of teaching and become more confident that they can learn by their own.

Conclusion

The findings of this study wrap up the point that in a modular learning approach, as an alternative learning style, the academic performance and self-efficacy of students are high and very satisfactory. Previous studies argued that this is because they are no longer passive learners; rather, they are actively involved in making meanings. While many are expecting a decrease in the academic performance of most Filipino students in this alternative learning style because of the absence of teachers and more knowledgeable others to assist them and explain concepts to them, this study argued the other way around. Students learned hard work to pass the activities in their modules; hence, they develop a sense of independence and autonomy as a learner. The increase in the level of self-efficacy of the students enabled them to successfully finish the tasks in their modules, hence, relatable to the increase in their academic performance.

Recommendations

Based on the results and conclusions of the study, the following recommendations are given:

1. Modular learning approach can be a learning strategy to foster autonomous learning among students.
2. Teachers need to actively play their indispensable role as active monitors by giving reasonable feedback to students' work in a modular learning approach.
3. The country's educational leaders must support the creation and incorporation of individualized learning styles (modular learning, mobile learning) into the country's educational system.
4. Future research may focus on the most effective type of assessment of students' performance in a modular approach to learning.
5. Qualitative research may focus on the contributing factors that lead to the level of self-efficacy of students in a modular approach, to craft programs and strategies to enhance their

self-efficacy and carry out tasks effectively regardless of any confronting scenarios.

Conflict of Interest

There is no conflict of interest between the authors in this manuscript.

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