

EFFECTIVENESS OF MODULAR LEARNING APPROACH AMONG STUDENTS IN A STATE UNIVERSITY IN THE PHILIPPINES

¹AIREEN ROSE C. MEJOS and ²ELIZABETH N. FARIN

^{1,2}President Ramon Magsaysay State University-Iba, Zambales, Philippines.

Abstract

The modular learning approach has been the most popular and cheap method of teaching in many schools especially in far flung schools and even in a state university in the rural areas. The study aimed to determine the effectiveness of using modular learning approach in relation to academic performance of college students in the President Ramon Magsaysay State University during SY 2020-2021. It is a quantitative descriptive research design with researcher made questionnaire as the main instrument in gathering data from the three hundred eight two (382) respondents who were randomly selected from the different campuses in the university. The researcher concluded that the student-respondent is a typical female, relatively third year students in Business Administration. The student-respondents found the use of module “Effective” on Cognitive, Affective and Psychomotor respectively as dimensions on the level of effectiveness on the use of modular learning approach. The level of student academic performance was rated “Good”. There is significant difference on the perception towards dimensions on Cognitive and Psychomotor when grouped according to age, year level and course respectively while on Affective was significant on year level and course profile variables respectively. There is positively slight/weak relationship between the level of academic performance and the dimensions of affective and psychomotor domains respectively while negligible relationship on cognitive domain.

Keywords: Modular, Cognitive, Psychomotor, Affective, Effectiveness

INTRODUCTION:

Because of the global crisis brought by COVID-19 Pandemic, the entire world has faced tremendous challenges not only in health but as well as in education. The Philippine Inter Agency Task Force has strongly recommended on avoidance and restriction of face-to-face contact with the students. As the school opening commenced last September 14, 2020 there were several challenges and problems observed from among the various elements of learning. The teachers encounter difficulty on supplies of bond paper, ink and printing machines, on the learning contents and assessment on students’ progress and development, on the mode of delivery and retrieval. The parents are likewise affected on the situation on their involvement and participation in helping their children to work on the respective modules. Much more so on the part of the students where they are affected on their emotional, social, mental or intellectual and physical development. As published in the national newspapers and aired in national television, that there are students who committed suicide and are traumatic because of the new learning approach. In the Philippine educational set-up, the Inter Agency Task Force (IATF), has ordered not to allow face-to-face classroom activities nationwide.

There are learning institutions both in public and private that opted on the use of online learning, flexible learning, blended learning, hybrid learning or modular learning approach. The utilization and adoption of learning approaches were given option among learning institution to decide based on the nature of the learners, and availability of resources. The

educational system for the basic education, higher education and graduate studies faced great dilemma on coming with an intervention program for instruction that would not hinder or cause to stop acquiring of education. There are learning institutions both in public and private that opted on the use of online learning, flexible learning, blended learning, hybrid learning or modular learning approach. The utilization and adoption of learning approaches were given option among learning institution to decide based on the nature of the learners, and availability of resources.

The use of module as a unit of work in a course of instruction that virtually-self-contained a method of teaching that is based on the concept of building of skill and knowledge in discrete units Daries (2009) was considered as the highest possible options in delivering learning instruction among the students. As oppose to most traditional curriculum design, modular design gives greater student autonomy in constructing the program and greater range of entry gates and exit points (Ali et al., 2010) According to Daries (2009) the module is a unit of work in a course of instruction that we can consider as true and it is a virtually-self-contained method of teaching because those information or context from learning competencies is based on the concept of building of skill and knowledge in discrete units and are compressed. The modules are self-directed in order that the learner gains knowledge from self-effort to learned, however, students that must be guided by the guardians and parents to discuss and answer all the activity needed from the modules.

MATERIALS AND METHODS

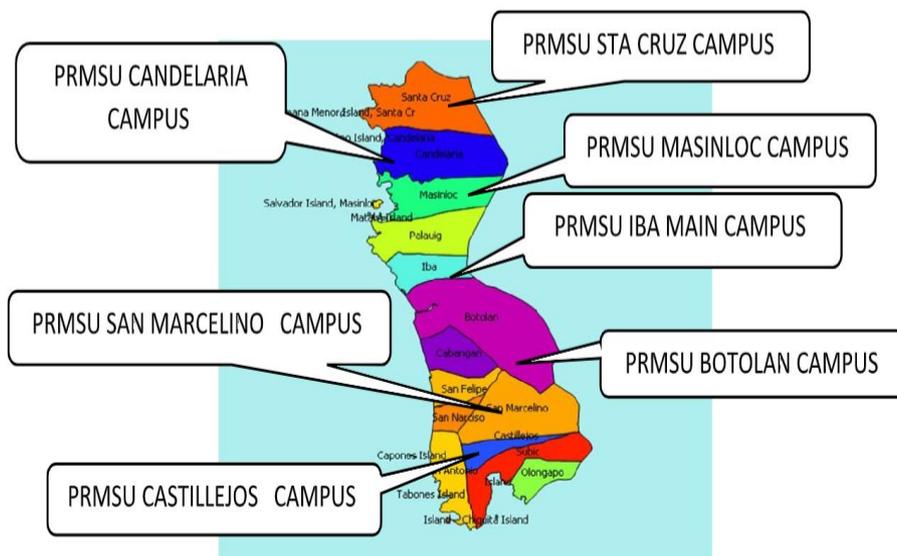
Method of Research

Descriptive research design was used to determine the effectiveness of modular learning approach.

Location of the Study

The study was conducted in seven campuses of President Ramon Magsaysay State University (Castillejos, San Marcelino, Botolan, Iba, Masinloc, Candelaria and Sta. Cruz) (Fig. 1).

Fig. 1: Map of Zambales showing the Location of the study



Respondents

There was a total of three Hundred eighty-two (382) students randomly selected from the different campuses using the Slovin's formula to determine the sample size of respondents.

Research Design, Data gathering and Analysis

Part I of the questionnaire reflected the profile of the respondents, this includes: age, sex, course, year level and place of residence

Part II of the questionnaire focused on the three domain of learning such as cognitive, psychomotor and effective

After subjecting the research instrument to process validation, it was submitted to the adviser for approval prior to actual administration to the target respondents.

A letter addressed to the University President and Campus Directors of satellite campuses and requested an approval to conduct the study and to administer the questionnaires thru online platforms like Google form and Facebook messenger. The respondents were given a link in the google form. The researcher put the directions clearly. The respondents were given enough time to answer the questionnaire via Google form.

After gathering the data, these were tallied, analyzed and interpreted. The data collected in this study were subjected to certain statistical treatments.

RESULTS AND DISCUSSION

This part includes the presentation of tables, analysis, and interpretation of data. The research findings related to the research questions are discussed based on related literature and studies,

and the researcher’s observations and actual experience. The distribution of the respondent’s profile is presented in Table 1.

Table 1: Frequency and Percentage Distribution on the Respondents’ Profile

Profile Variables		Frequency	Percent
Age Mean=20.61 years old	18-19 years old	85	22.30
	20-21 years old	227	59.40
	22-23 years old	34	8.90
	24 and above	36	9.40
	Total	382	100.00
Sex	Female	272	71.20
	Male	110	28.80
	Total	382	100.00
Year Level	First	80	20.90
	Second	132	34.60
	Third	155	40.60
	Fourth	15	3.90
	Total	382	100.00
Course	Education	106	27.70
	Agriculture	54	14.10
	Forestry	1	0.30
	Engineering	1	0.30
	Business Administration	121	31.70
	Tourism	6	1.60
	Information Technology	3	0.80
	Accountancy	22	5.80
	HRM	36	9.40
	Fishery Education	5	1.30
	Other	27	7.10
	Total	382	100.00
Place of Residence	Town Proper	49	12.80
	Barangay	310	81.20
	Mountainous Area	1	0.30
	Sitios	22	5.80
	Total	382	100.00

The frequency and percentage distribution on the respondents’ profile of age, sex, year level, course and place of residence respectively.

Majority of the student-respondents were from age group of 20-21 years old with 227 or equivalent to 59.401%; 85 or 22.30%, from 18-19 years old; 36 or 9.40% from 24 years old and above; and 34 or 8.90% from 22-23 years old. The computed mean age of the student-respondents was 20.61 or 21 years old. The data clearly demonstrate that the student-respondents were relatively young in their early adulthood and on the stage for acquiring college education. In the study of Bernardo (2012) as cited by Molino (2018) that age is the quality of the mind and is equated with wisdom and experienced. Age is the time that the person existed since birth and aging is growth in experience. It connotes achievement at the goals purposed to be meaningful to one’s self and not those superimposed by others.

Majority are female with 272 or 71.20% while 110 or 28.80% of the respondents are females. Clearly gleaned from the data on the superiority and dominance of the male student respondents

compared to females. This observation is similar to course like Business Administration and Education where they are courses mostly attracted by female students.

Most of the student-respondents where from third year with 155 or 40.60%; 132 or 34.60% from second year; 80 or 20.90% are first year and 15 or 3.90% are from fourth year.

Most of the student-respondents were taking up Business Administration course with 121 or 31.70%; Education, 106 or 27.70%; Agriculture, 54 or 14.10%; Hotel and Restaurant Management, 36 or 9.40%; others, 27 or 7.10%; Accountancy, 22 or 5.80%; Tourism, 6 or 1.60%; Fishery Education, 5 or 1.30%; Information Technology, 3 or 0.80% and 1 or 0.30% for Forestry and Engineering course. Based on enrolment, the college of Business Administration in Iba Campus has the greatest number of enrollees.

Majority of the student-respondents are living in barangays with 310 or 81.20%; 49 or 12.80% are living in the town proper; 22 or 5.80% are living in sitios while only 1 or 0.30% is living in mountainous area. The data indicates that the student-respondents were living in barangay areas.

Table 2: Effectiveness of Modular Learning Approach

Dimension on the level of effectiveness on the use of modular learning approach		Overall Weighted Mean	Qualitative Interpretation
1	Cognitive	2.65	Effective
2	Affective	2.64	Effective
3	Psychomotor	2.68	Effective
	Grand Mean	2.67	Effective

The student-respondents' assessment was "Effective" on Psychomotor with overall weighted mean of (2.68); Cognitive (2.65) and Affective (2.64). The computed grand mean on the responses towards dimensions on the level of effectiveness on the use of modular learning approach was 2.67 with qualitative interpretation of "Effective".

Learning strategies are employed to ensure that the objectives of the activities are achieved. All levels of psychomotor learning can be evaluated and achieved through different strategies. The perception and set level are attained through lectures, reading aided demonstrations and audio or video observations. The evaluations are done using a question-and-answer period. The trainee and trainer learn the guided response and mechanism level through discussions and reflections. Evaluation is conducted through surveys, case studies, and role-play. Complex overt response is conducted through on-the-job training and through practices. Simulations can be used for evaluation purposes. Finally, both adaptation and origination are evaluated using the real-life situations (Clark, 2010).

Table 3: Level of Academic Performance N=382

Level of Academic Performance	Frequency (f)	Percentage (%)
1.25 -1.5 (Very Good)	123	32.20
1.75 - 2.00 (Good)	209	54.70
2.25-2.50 (Satisfactory)	44	11.50
2.75 - 3.00 (Passing)	6	1.60
Total	382	100.00
Mean of Academic Performance=1.79 (Good)		

Majority of the student-respondents obtained a grade range from 1.75-2.00(Good) with 209 or equivalent to 54.70%; 123 or 32.20%, from 1.25-1.50 (Very Good); 44 or 11.50%, from 2.25-2.50 (Satisfactory); and 6 or 1.60%, from 2.75-3.00 (Passing). The computed mean of academic performance was 1.79 with qualitative interpretation of “Good”.

The good academic performance of the college students is accounted on their learning styles, and learning habits. Academic performance is the measurement of student achievement across various academic subjects. Teachers and education officials typically measure achievement using classroom performance, graduation rates, and results from standardized tests (Mores, 2020). In Philippine setting, teachers are employing three (3) categories in determining the academic performance of the learners. Typically, they are using written works, performance tasks, and quarterly assessment. This is used during pre-pandemic where the learners attend their classes in the school (Loyola, 2016). This includes the written works and performance tasks (Reguindin-San Agustin, 2020). Teachers are also encouraged to incorporate the use of portfolio assessment as means of evaluating the academic performance of the learners. Some schools included portfolio assessment while others stick to the written works and performance tasks (Mateo, 2020).The academic performance of the learners serves as the reflection of their total performance for the quarter. This is usually accumulated from the graded and recorded written works and performance tasks of the learners (Sanchez, 2020).

Table 4: Summary Table on the Analysis of Variance

Sources of Variations		Cognitive		Affective		Psychomotor	
		Sig	df	Sig	F	Sig.	Decision
Age	Between Groups	0.019	Reject Ho Significant	0.080	Accept Ho Not Significant	0.007	Reject Ho Significant
	Within Groups						
	Total						
Sex	Between Groups	0.430	Accept Ho Not Significant	0.464	Accept Ho Not Significant	0.409	Accept Ho Not Significant
	Within Groups						
	Total						
Year Level	Between Groups	0.001	Reject Ho Significant	0.014	Reject Ho Significant	0.003	Reject Ho Significant
	Within Groups						
	Total						
Course	Between Groups	0.000	Reject Ho Significant	0.000	Reject Ho Significant	0.000	Reject Ho Significant
	Within Groups						
	Total						
Place of Residence	Between Groups	0.215	Accept Ho Not Significant	0.671	Accept Ho Not Significant	.0706	Accept Ho Not Significant
	Within Groups						
	Total						

There is significant difference on the dimensions towards level of effectiveness on the use of modular learning approach as to Cognitive when grouped according to age (0.019); year level (0.001); and course (0.000) respectively. There is significant difference on the dimensions towards level of effectiveness on the use of modular learning approach as to Affective when grouped according to year level (0.014) and course (0.000) respectively.

There is significant difference on the dimensions towards level of effectiveness on the use of modular learning approach as to Psychomotor when grouped according to age, (0.007); year level (0.003) and course (0.000) respectively.

Table 5: Pearson Product Moment Coefficient of Correlation to describe the degree of relationship of the Level of Academic Performance and the dimensions towards level of effectiveness on the use of modular learning approach

Sources of Correlations		Academic Performance	Psychomotor	Cognitive	Affective
Academic Performance	Pearson Correlation	1	.116*	.029	.116*
	Sig. (2-tailed)		.024	.577	.023
	N	382	382	382	382
	Decision		Positively Slight Correlation	Negligible Correlation	Positively Slight Correlation
	Interpretation		Reject Ho	Accept Ho	Reject Ho
*. Correlation is significant at the 0.05 level (2-tailed).					
**. Correlation is significant at the 0.01 level (2-tailed).					

There is positively slight/weak correlation between the level of academic performance and the dimensions of psychomotor and affective manifested on the computed Pearson r-value of 0.116* and 0.116* respectively. The computed Sig (2-tailed) test value of 0.024 and 0.023 which is lower than (<) 5% significant level, the null hypothesis is rejected, hence there is significant relationship. On the other hand, there is negligible correlation between the level of academic performance and the dimensions of cognitive manifested on the computed Pearson r-value of 0.029. The computed Sig (2-tailed) test value of 0.577 which is higher than (>) 5% significant level, the null hypothesis is accepted, hence there is no significant relationship.

This finding supports on the study Selga (2013) where in the modular-based work text was effective in helping students improving academic achievements in science. Accordingly, the module led to the accomplishment of the subject's basic goals, allows for the development of higher cognitive skills, is well-organized and well-designed, and is appropriate for the students' vocabulary level and performance.

Knapp (2006) further explains that, it is very imperative that the course embraces modules for the students, the modules should link unswervingly with the main text and have drills that matches with the lessons. The activities in the modules should be thought-provoking for the students and should be able to aid you, as a teacher evaluate where they, as far as how well they have immersed the material and there is a need to review the lessons again with them. By exhausting modules your faculty will also have enhanced inclusive challenging notches.

CONCLUSIONS

Based from the study, the student-respondent is a typical female, relatively third year college students in Business Administration. The student-respondents assessed “Effective” on Cognitive, Affective and Psychomotor respectively as dimensions on the level of effectiveness on the use of modular learning approach. The level of student academic performance was rated “Good”. There is significant difference on the perception towards dimensions on Cognitive and Psychomotor when grouped according to age, year level and course respectively while on Affective was significant on year level and course profile variables respectively. There is positively slight/weak relationship between the level of academic performance and the dimensions of affective and psychomotor domains respectively while negligible relationship on cognitive domain.

RECOMMENDATIONS

Based on the summary of the investigations and the conclusions arrived at, the researcher formulates recommends that for psychomotor development, teacher/ module writer or module author may include activities that integrates repetitive drills and movement; For affective domain, the students may be given briefing and orientation before the opening of classes on the advantage and dis-advantage in using modular learning approach and to developed the competence of improving resilience by practicing strategies of “bouncing back” after adversity; For Cognitive domain, the school management may create instructional committee to evaluate the learning materials as to quality and accuracy of the learning contents help the learners to be independent and self-directed and develop the skill of evaluating the advantage and disadvantage of the learning concepts; teacher’s may create a comprehensive self-learning module that contain the cognitive, affective and psychomotor domain to increase the learning; To future researcher/s, to conduct a parallel or similar follow-up study with in-depth and wider in scope so as to validate the findings obtained in the study.

References

1. Ali GS, Valentin IV, Benny T (2010). Allocation of Quality Control Stations in Multi Stage Manufacturing Systems. *Comput. Ind. Eng.*, 60: 473-484.
2. Bernardo, 2012; Effects of teachers' absenteeism on the academic performance of elementary grade pupils: towards a guide.
3. Clark, Andy. 2010. “Out of Our Brains,” *New York Times*, December 12, <http://opinionator.blogs.nytimes.com/2010/12/12/out-of-our-brains/>
4. Daries, I. (2009). *Instructional Technology and Media*. McGraw Hill Book Company New York, USA. p. 72.
5. Knapp, S. (2006) *The Econometrics of Maritime Safety—Recommendations to Enhance Safety at Sea*. PhD Thesis, Erasmus University, Rotterdam.
6. Loyola, A.P. (2016, May 19). Performance tasks vs written works. Retrieved from https://www.pressreader.com/philippines/sunstar-pampanga/20160519/2816639592_37675

7. Mateo, J. (2020, October 12). Written works, performance tasks: Here's how students would be graded this school year. Retrieved from <https://onenews.ph/written-works-performance-tasks-here-s-how-students-would-be-graded-this-school-year>
8. Molino, A. (2018). "What I'm speaking is almost English...": A Corpus-based study of metadiscourse in English-medium lectures at an Italian university. *Educational Sciences: Theory & Practice*, 18, 935–956. <http://dx.doi.org/10.12738/estp.2018.4.0330>
9. Mores, L.M. (2020, December 24). Grading system in times of pandemic. Retrieved from <https://education-center.medium.com/grading-system-in-times-of-pandemic-d2075355a8f3>
10. Reguindin-San Agustin, J.R. (2020, December 24). How do written works and performance tasks vary from one another? Retrieved from <https://education-point.medium.com/how-do-written-works-and-performance-tasks-vary-from-one-another-c3299b3e0d14>
11. Sanchez, J.R. (2020, December 24). The numerical grades or the lessons learned. Retrieved from <https://education-hub.medium.com/the-numerical-grades-or-the-lessons-learned-d4fb65d8e119>
12. Selga, M. C. R. (2013). Instructional materials development: A worktext in Science, Technology and Society. *LCCB Development Education Journal of Multidisciplinary Research*, 2(1), 1-1. Retrieved from <http://lcc.edu.ph/assets/images/research/pdf/>