Integration of Interactive Motivational Activities in Teaching Statistics and Probability Towards Improved Academic Performance

Cherry Rose T. Malgapo*, Diwata Villaflor**

*(Department of Education, Aliaga National High School, Aliaga, Nueva Ecija, Philippines
Email: cherryrosemalgapo@gmail.com)
** (College of Arts and Science, Nueva Ecija University of Science and Technology, and Cabanatuan City, Nueva Ecija
Email:jodivillaflor1072@gmail.com)

--************************--------------------------------

Abstract:

Integration of interactive motivational activities in teaching plays a vital role in learning process of the students in Statistics and Probability. This study aims to determine the effectiveness of interactive motivational activities in teaching Statistics and Probability towards improved academic performance of the students. The respondents of the study are the 25 selected Statistics and Probability subject teachers in Nueva Ecijaand they were selected using random sampling method. The researchers utilized qualitative research design through the use of interview guide questions. And all data were tabulated, encoded and analyzed. Based on the findings of the study, the integration of interactive motivational activities helps learners more engaged and actively participated. Moreover, integration of interactive motivational activities was found more effective in increasing the achievement performance of the students.

Keywords —**Academic Performance**, **Interactive Motivational Activities, Statistics and Probability, Teaching**

--************************--------------------------------

I. INTRODUCTION

Statistics and Probability is one of the subjects not only in the Senior High School Curriculum but also in college degree. This subject includes topics that may use and play important role to other learning areas such as in economics, science and technology and even mathematics. The subject topics includes normal distribution, central tendency, population, probabilities, hypothesis testing, correlation and regression analysis.

However, students experienced difficulties in learning mathematics. They have difficulties in interpreting and determining, solving and analysing problems.

With the difficulties experienced by students in learning Statistics and Probability, teachers find ways and solutions to help learners improve their academic achievements, learning engagement and motivation to learn the subject well.

Varied motivational strategies and methodologies are utilized by teachers in teaching such as use of interactive approach, virtual classroom, research-based, game-based and many more.

Hence, teachers may continue to find ways learning activities to meet the learning competencies effectively and efficiently.

According to San Juan (2018), the utilization of interactive motivational activities found a positive effect on the enhancement of learners' academic performance.

Interactive motivational activities refer to the educational process of relating the curriculum to a particular classroom setting and area of application to make the learning competencies relevant and useful to diversity of learning.

The interactive motivational activities are designed to achieved learning competencies and mastery of the subject matter into a simple and practical application in relation various learning areas.

In the above notion of the study, the researchers aimed to determine the impact of interactive motivational activities in teaching towards academic performance in Statistics and Probability.

Conceptual Framework

The concept of this research was based on the Expectancy Theory of Motivation by Vroom (1961). The theory applies motivational principles that often used satisfaction of students in learning. It helps students be motivated by their conscious and initial expectations of what will happen if they apply interactive motivational activities in teaching.

Based on the theory, the utilization of interactive motivational activities, it helps learners motivated and engage that can enhance their skills and knowledge towards better academic performance. Furthermore, each interactive motivational activities provides learners with opportunities to have deeper understanding and applying concepts and articulating new knowledge.

Figure 1. The Conceptual Framework of the Study

Figure 1 shows the conceptual framework of the study. As shown in the figure, the expectancy theory of motivations helps learners to develop their personality, ability, knowledge, experiences, skills towards better academic performance in Statistics and Probability.

Statement of the Problem

The study aims to determinethe impact of interactive motivational activities in teaching towards academic performance in Statistics and Probability.

Specifically, the study sought answers the following questions:

1. How may the integration of interactive motivational activities in teaching be described in terms of learners' engagement, participation, attitude and skills?

2. Is the integration of interactive motivational activities in teaching Statistics and Probability help learners to improve their performance?

3. What are the challenges encountered by teacher in utilization of interactive motivational activities in teaching Statistics and Probability?

Scope and Limitation

The scope of the study was focused on the utilization of interactive motivational activities in teaching Statistics and Probability. Whereas the interactive motivational activities were limited to the used of interactive games, solve a brain teaser, collaborative, challenge, and experiential learning.

II. METHODOLOGY

A. Research Design

This study used mixed-method research design to described the effectiveness of interactive motivational activities in teaching Statistics and Probability.

B. Participants of the Study

The participants of the study were 25 teachers in teaching Statistics and Probability in selected public and private schools in Nueva Ecija. The participants were selected using purposive sampling method.
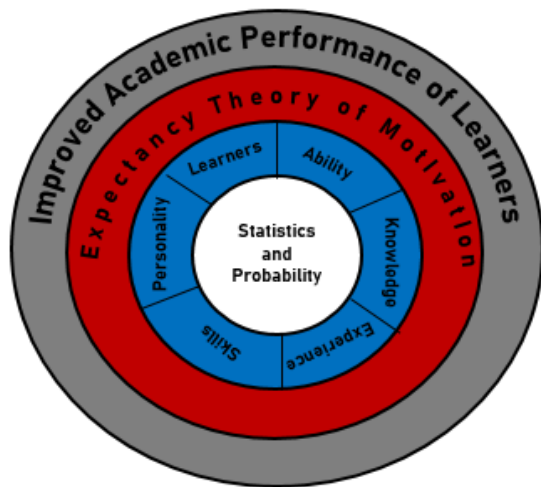
And the participants are those who integrated interactive motivational activities in teaching.

C. Data Gathering Procedure

To gather the needed data, the researchers secured permission and approval to conduct the study. They personally administered survey questionnaire and they were oriented the participants concerning the purpose of the study.

D. Data Analysis

All data gathered were analysed using weighted mean for quantitative data and logical analysis for qualitative data.

III. RESULTS AND DISCUSSION

1. Integration of Interactive Motivational Activities in teaching Statistics and Probability be described in terms of learners' engagement, participation, attitude and skills?

TABLE I
INTERACTIVE MOTIVATIONAL ACTIVITIES

	Interactive Motivational Activities in Teaching Statistics and Probability		
	Integration of IMA	Weighted Mean	Interpretation
1	Learners' Engagement	3.45	Strongly Agree
2	Participation	3.56	Strongly Agree
3	Attitude	3.35	Strongly Agree
4	Skills	3.77	Strongly Agree
Overall Weighted Mean		**3.53**	**Strongly Agree**

Table I shows the data on the interactive motivational activities in teaching Statistics and Probability. As shown, the overall weighted mean had 3.53 and verbally interpreted as "Strongly Agree". Skills were found had the highest weighted mean of 3.77 and attitude towards learning got 3.35 and verbally interpreted as "Strongly Agree". The findings meant that utilization of interactive motivational activities in teaching Probability and Statistics helps teachers to activate and motivate students' engagement, participation, attitude and skills towards better learning.

2. Students' Performance in Statistic and Probability in Integration of Interactive Motivational Activities (IMA)

Based on the findings, majority of the students in Statistics and Probability had better performance in Statistics and Probability with the integration of Interactive Motivational Activities.

Almost half or 52.17% of the students obtained between 91 – 95 in final grade in Statistics and Probability with the integration of IMA compare to those students with teachers utilized traditional approach. Therefore, it is concluded that integration of interactive motivational activities in teaching Statistics and Probability helps students to improved their performance. It also help students focuses on learning to sustain their needs and gets maximum knowledge on the lessons.

3. Challenges Encountered by Teacher in Utilization of Interactive Motivational Activities in Teaching Statistics and Probability

Based on the data gathered, teachers integrated interactive motivational activities in teaching Statistics and Probability were challenged on the integration of motivational activities that requires modernization of teaching methods, unavailability of teaching and learning materials. They were also challenged on the use of new materials and the behaviour of students towards learning.

IV. CONCLUSIONS

The integration of interactive motivational activities in teaching Statistics and Probability concluded that effective ways to motivate students to learn, actively engage and participated in learning, foster positive attitude and develop their skills towards better academic performance.

ACKNOWLEDGMENT

REFERENCES

[1]   K. Abu Bakar, R.A. Tarmizi, R. Mahyuddin, H. Elias, W.S., Luan, and A. F. M. Ayub. Relationship between University Students' Achievement motivation, attitude and academic performance in Malaysia. Procedia Social and Behavioral Science. 2:4906-4910, 2010.

[2]   S. Todd. Motivation and Cognitive Control, Psychology Press New Yotk: NY. (2015).

[3]   G. San Juan. Motivational Interactive Activity towards Academic Performance in Science. Published Thesis. PHINMA Araullo University, Cabanatuan City, Philippines, 2018.

[4]   J. Ruiz. Interactive Motivational Activities in Statistics and Probability. Thesis. College of the Immaculate Conception, Cabanatuan City, Philippines, 2020

[5]   M. Giorgdze& M. Dgebuadze. Interactive Teaching Methods: Challenges and Perspectives. International E-Journal of Advances in Education. DOI; 10.18768/ijaedu.370419. 2021

[6]   B. Kang & S.H. Tan. Interactive Games: Intrinsic and Extrinsic Motivation, Achievement and Satisfaction. Journal of Management and Strategy. DOI: 10.5430/jms.v5n4p110. 2014