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"LEARNING STYLES OF SELECTED GENERATION Z STUDENTS OF NUEVA ECIJA UNIVERSITY OF SCIENCE AND TECHNOLOGY LABORATORY HIGH SCHOOL AS DETERMINANT OF THEIR ACADEMIC ACHIEVEMENT"

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INTRODUCTION

It is known that learning processes vary from person to person due to the presence of biological and psychological differences. It is believed that when teachers are able to analyze the differences and needs of their students, the educational process is likely to become optimized for both students and teachers (Fairhurst&Fairhurst 1995).

Knowing students' learning styles can help in various ways to enhance learning and teaching (Garf, Kinshuk, Liu, 2009).

The diversity in teaching and learning styles has beginning to gain more attention as many studies match their preferred learning styles (Reid 1987; Zhenhui 2001; Too 2009).

It is indeed vital for teachers to have awareness of their learners' needs, capacities, potentials and learning styles preferences for effective classroom teaching and learning in this fast growing world. The subject of learning style had been researched popularly in the past. With little empirical knowledge about the relationship of learning styles and students' academic achievement, the need for research in this area is not only timely, but imperative.

Felder (1993) reported that alignment between students' learning styles and an instructor's teaching style leads to better recall and understanding, as well as to more positive post-course attitudes. Since learning style preferences vary between students, the most effective mode of instruction will also vary. Furthermore, it has been reported that teaching is most effective when it caters for a range of learning styles, in part because occasionally having to learn in a less preferred style helps to broaden students' range of skills (Felder Felder and Dietz 2002).

If any consideration is to be given to accommodating students' learning style preferences when considering the design of instructional or assessment materials, then it is necessary to know firstly whether the academic performance of Generation Z students is dependent upon their preferred learning style, and secondly the distribution of learning style preferences within a student cohort must be known. This paper reports the distribution of learning styles among the selected students of Nueva Ecija University of Science and Technology Laboratory High School and investigates the relationship between the overall academic performance, as described by their grade point average in the end of the first grading period of S.Y. 2012-2013, and these styles. Some of the implications of these findings for teaching and learning are also discussed.

STATEMENT OF THE PROBLEM

This study aims to determine whether learning styles of selected Generation Z students in Nueva Ecija University of Science and Technology Laboratory High School affect their overall academic achievement which is described by their general point average at the end of the first grading period in the S.Y. 2014-2015.

Specifically, this study sought to answer the following questions:

1. How may the profile of respondents be described in terms of:
   1.1. Age;
   1.2. Gender;
   1.3. Grade point average
2. What is observed to be the most preferred learning style of the respondents?
3. Is there a significant relationship between the respondents' profile and their preferred way of learning?
4. Is there a significant relationship between the students' learning style and academic achievement?
5. What is the implication of the study in the teaching learning process?

SIGNIFICANCE OF THE STUDY

The research "Learning Styles of Selected Generation Z Students of Nueva Ecija University of Science and Technology Laboratory High School as Determinant of Their Academic Achievement" seeks to provide support for the following: a) students do learn differently from each other; b) student's academic achievement is related to how individuals do, in fact, learn; c) when students are taught with approaches and resources that complement their unique learning styles, their achievement is significantly increased.

The findings of the study would benefit the teachers, learners, and the future researchers.

The study redirect the teacher's attention and concern for teaching may be more zealous of their

prime duty which is to teach and to make the pupils learn through acquiring and searching for more innovative approaches and methodologies to enhance pupil's learning.

Learners will be able to know how they learn best through the help of the questionnaire and at the same time, they will be aware that those learning styles, when properly managed, can help them excel academically.

Future Researchers may use this study as a valuable source of related findings and a good springboard in the choice of the future research topics.

SCOPE AND DELIMITATION

This study focuses on the relationship(s) of learning styles and academic achievement of 215 selected Generation Z students of Nueva Ecija University of Science and Technology Laboratory High School.

RESEARCH METHODOLOGY

This chapter presents the research methodology used in the study. This includes the research design/method, data gathering instruments, the method of collecting data and data treatment which were analyzed.

Research Design/Method

The nature of this study is descriptive-interpretive, and designed to investigate whether the learning styles used by students in selected secondary school, influence their overall academic achievement. A survey research design is used to investigate, assess opinions wand preferences in educational issues and problems. This design is considered the most appropriate method to measure attitudes, beliefs or personality structures in a natural setting through tests or attitude scales or questionnaires. Therefore, the research design for this study advocates a survey that is mainly identifies with a quantitative mode of inquiry. The research design necessary to provide answers to the research questions would require comparison between a dependent variable which is the students' overall academic achievement, while the independent variable here is their learning styles. Learning Styles Survey (LSS) instrument includes six distinct learning style elements namely, Visual, Auditory, Kinesthetic, Tactile, Group and Individual. The statistical procedures employed in this study were one-way ANOVA and correlation through the program Statistical Package for the Social Sciences (SPSS). The data are collected by means of Learning Styles Survey (LSS), which contains 60 statements addressing the concerns of students with regard to six learning styles.

Sampling Technique and Participants

There will be 215 respondents who were selected using stratified random sampling. The number of samples was based on the Slovin's formula computed with 5% margin of error equivalently to 95% level of confidence.

Research Instrument

The main instrument used for gathering data was questionnaire with sets of questions that can satisfy the needs of the study.

The data collected using the questionnaires were statistically treated using the following scoring sheet.

Scoring Sheet

Instructions

There are 10 questions for each learning category in this questionnaire. The questions are grouped below according to each learning style. Each question you answer has a numerical value.

SA	**A**	**U**	**D**	**SD**
Strongly agree	Agree	Undecided	Disagree	Strongly Disagree
5	4	3	2	1

Fill in the blanks below with the numerical value of each answer. For example, if answered Strongly Agree (SA) for question 6 (a visual question), write a number 5 (SA) on the blank next to question 6 below.

Visual
6 = 5

When you have completed all the numerical values for *Visual*, add the numbers. Multiply the answer by 2, and put the total in the appropriate blank.

Follow the process for each of the learning style categories. When you are finished, look at the scale at the bottom of the page; it will help you determine your major learning style preference(s), your minor learning style preference(s), and those learning style(s) that are negligible.

Visual	
Question	Score
1	
7	
13	
19	
25	
31	
37	
43	
49	
55	
Total	
Score = Total x 2	
Auditory	
Question	Score
2	
8	

14	
20	
26	
32	
38	
44	
50	
56	
Total	
Score = Total x 2	

Kinesthetic	
Question	Score
3	
9	
15	
21	
27	
33	
39	
45	
51	
57	
Total	
Score = Total x 2	

Individual	
Question	Score
4	
10	
16	
22	
28	
34	

40	
46	
52	
58	
Total	
Score = Total x 2	

Group	
Question	Score
5	
11	
17	
23	
29	
35	
41	
47	
53	
59	
Total	
Score = Total x 2	

Tactile	
Question	Score
6	
12	
18	
24	
30	
36	
42	
48	

54	
60	
Total	
Score = Total x 2	

Data Analysis

For the researcher to determine the significant relationship of the data to be gathered, the data are to be compared and analyzed statistically using One-way Analysis of Variance and Pearson's Correlation.

Data Collection

The researcher employed the following steps in gathering data:

1. The researcher sought for the approval of the principal of the selected secondary school to administer the study;
2. After the approval, the questionnaires were distributed to the identified pupils included in the sample through the homeroom advisers;
3. Pupils were given enough time to evaluate their preferred learning style through the provided questionnaires; and
4. The collected data were statistically treated.

Correlation Testing and Significance

The test of hypothesis and significance were done using the program Statistical Package for the Social Sciences

PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

This chapter comprises the tabular presentations, textual analysis and interpretation of the gathered data.

I. Respondents' Profile

This section presents the profile of pupil-respondents according to age, gender, and pupil's summative evaluation described by their grade point average in the 1st grading period.

Table 1.1 shows the frequency distribution of age of the respondents.

Table 1.1

Age of Respondents

Age	Frequency (f)	Percentage (%)
11	2	o.93%
12	35	16.28%
13	48	22.33%
14	52	24.19%
15	59	27.44%
16	19	8.84%
Total	**215**	**100%**

Majority of the pupil-respondents are of 15 years old which comprises 27.44% of the population.

Table 1.2 presents the gender of respondents.

Table 1.2

Gender of the Respondents

Gender	Frequency (f)	Percentage (%)
Male	93	43.26%
Female	122	56.74
Total	**215**	**100%**

It is shown in the table that actual classroom setting is dominated by female students since 56.74% of the respondents are female and leaves the remaining 43.26% for males.

Table 1.3 presents the academic achievement of the respondents that was based on their grade point average.

Table 1.3

Achievement of Respondents

GPA	Frequency (f)	Percentage (%)	Mean Grade
93-94	7	3.26%	86.16
91-92	33	15.35%	
89-90	37	17.21%	
87-88	49	22.79%	
85-86	40	18.68%	
83-84	23	10.7%	
81-82	16	7.44%	
79-80	7	3.26%	
77-78	2	0.93%	
75-76	1	0.47%	
Total	**215**	**100%**	

The data presented in the table reveals that majority of the respondents have a grade of 87-88 which comprises 22.79% of the total number of respondents. Also, it shows that the least percentage of students received a grade ranging from 75-76 which represents only 0.47% of the population. The mean grade of the students is 86.16 indicating that the performance is good.

Table 1.4 shows the learning style preferences of the respondents.

Table 1.4 Learning Style

Preferences of the Respondents

	Visual	Audi-tory	Kines-thetic	Indivi-dual	Group	Tac-tile	Total
I-Earth	5	8	3	5	11	0	32
I-Jupiter	7	5	7	6	13	2	40
II-Diamond	3	4	6	8	8	0	29
II-Amethyst	3	5	5	4	9	4	30
III-Argon	6	10	4	7	4	4	35
III-Neon	4	7	6	5	10	0	32
IV-Einstein	10	9	3	4	9	2	37
IV-Newton	6	10	4	4	11	1	36
Total	44	58	38	43	75	13	271

As shown in the table, the learning styles of the respondents are distributed accordingly. The researcher have mentioned that the total number of respondents is 215. But the table shows a total of 271. This is because some of the respondents do have more than one preferred way of learning.

II. Relationship Between Students' Profile and the Different Styles of Learning

This section presents the significant relationship between the profiles of the students and their preferred way of learning.

Table 2.1 presents the relationship between the age of the students and their preferred way of learning.

Table 2.1

Correlation between learning style and Students' age

	r-value	interpretation	significance	interpretation
Learning Style and Age	0.029	Very small positive correlation	0.595	Not significant

Given the data on the table, it shows that there is a very small positive correlation between the age and learning styles with significance value of 0.595 giving an interpretation that the relationship is not significant.

Table 2.1.1 shows a more detailed presentation of table 2.1. It reveals the relationship of age to each learning style.

Table 2.1.1

	r-value	Interpret a-tion	Signi fi-cance	Interpr et-tation
Age and Visual	0.035	Very small positive correlation	0.613	Not significant
Age and Auditory	0.033	Very small positive correlation	0.627	Not significant
Age and Kinesthetic	0.029	Very small positive correlation	0.675	Not significant
Age and Individual	0.033	Very small positive correlation	0.626	Not significant
Age and Group	-0.083	Very small negative correlation	0.228	Not significant
Age and Tactile	0.140	Very small positive correlation	0.040	Significant

Correlation between students' age and each Learning style

As shown in the table, age and visual do have a very small positive correlation which is not significant with significance value of 0.613. Age correlated with auditory, kinesthetic, individual, group and tactile learning styles are also found out to be not significant.

Table 2.2 presents the relationship between students' gender and their learning style.

Table 2.2

Correlation between gender of students and Their learning style

	r-value	interpretation	significance	Interpretation
Learning style and Gender	-0.047	Very small negative correlation	0.437	Not significant

The table shows that since the r-value is -0.047 and significance value is 0.437, it is given that the relationship vested between gender and learning style and low but significant.

Table 2.2.1 shows a more detailed presentation of table 2.2. This table presents the relationship of each learning style to gender.

Table 2.2.1

Correlation between gender of students and each Learning style

	r-value	Interpret-ation	Signifi-cance	Interpret-ation
Gender and Visual	0.104	Very small positive correlation	0.128	Not significant
Gender and Auditory	0.198	Very small positive correlation	0.003	Significant
Gender and Kinesthetic	0.133	Very small positive correlation	0.052	Not significant
Gender and Individual	0.142	Very small positive correlation	0.037	Significant
Gender and Group	0.052	Very small positive correlation	0.451	Not significant
Gender and Tactile	0.134	Very small positive correlation	0.050	Significant

The data on the table presents the existing low correlation between gender and each learning

styles as defined by each of its r-value and are not significant as verified by their significance value.

Table 2.3 reveals the relationship of learning style to the students' academic achievement described by their grade point average.

Table 2.3

Correlation between students' learning style and Academic achievement

	r-value	interpretation	significance	interpretation
Learning style and GPA	-0.121	Very small negative correlation	0.014	Significant

It is shown in the table above that the learning styles of the students affect their general point average, and thus there is a significant relationship between the students' preferred learning style and their academic achievement.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter comprises the summary of the study, the summary of findings based on the presented data, the conclusions derived from the analyses and summary of findings and the recommendations made related to the results of the study.

Summary

Entitled "Learning Styles of Selected Students of Nueva Ecija University of Science and Technology Laboratory High School as Determinant of Their Academic Achievement", this study sought to establish a defined relationship between learning styles and academic achievement of selected students and make this study into reality through the utilization of descriptive-correlational research design accomplished by means of administration of questionnaires in a sample 215 students who were selected using the stratified random sampling.

The instruments used were validated and reliability tested to identify the learning styles preferred by the students. The data gathered were statistically tested using statistical tools such as percentage, weighted mean, Pearson correlation and analysis of variance.

Summary of Findings

A. Profile of Respondents

Majority of the respondents are of age 15 years old and female pupils dominated males in an actual classroom setting. Most of the pupils have a grade ranging from 87-88.

B. Relationship Between Students' Profile and the Different Styles of Learning

Most of the students preferred learning by doing, using their hands, involving their skills, or in

other words, they prefer the tactile way of learning. The age and gender of the students does not affect their preferred way of learning. But on the other hand, the learning style of the students has a significant relationship to their academic achievement. Thus, the students' preferred way of learning has an effect to their academic achievement.

Conclusions

Based on the summary of findings, the researcher comes up that;

1. The ages of the pupils define their preparedness and interests for learning.
2. Mostly, students in Nueva Ecija University of Science and Technology Laboratory High School are girls.
3. Based on the results of the computations, the age and gender of the students do not affect their choice on how they prefer to learn.
4. On the other hand, the results of the study also show that the students' learning styles can affect their general point average.
5. Thus, the researcher came up to the conclusion that there is a significant relationship between the students' learning styles and their academic achievement.

Recommendations

After thorough analyses of data, the researcher hereby recommends that;

1. Teachers should give much attention in dealing with the students as part of the teaching-learning process. It is recommended that they should also be aware of how the students learn, for them to be able to prepare lessons and strategies that will suit the learning style of each pupil and also, for the students to have maximum participation in the instruction.
2. To future researchers, they may conduct another study on the relationship of learning styles to academic achievement with the following considerations: first, a specified subject as its concentration and; secondly, conducting surveys for the problems encountered in meeting the needs of students with different ways of learning and for the possible remedies in order to strengthen instruction.

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