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Learning Styles to Academic Performance: An Evaluation

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Abstract: ***This study sought to assess the learning styles and academic performance of Mayayap National High School in Cabanatuan City, Province of Nueva Ecija, Philippines. It utilized the descriptive and correlation methods of research. Data were gathered through valid and reliable questionnaire-checklist distributed to the respondents identified through total sampling. Also, interview was used to validate answers of the respondents. In the light of the findings, the study concluded that the respondents were of diverse profiles. Grade 10 English subject students of Mayapyap National High School are potential excellent learners of varied academic focus or area considering that they are multi-modal learners. Similarly, they are adaptive to any form of education or training which is advantageous to them as they take their journey to education. Also, the Mayapyap National High School, if they (respondents) continue their study, would produce graduates who could be functional in a variety of course and employment after graduation. However, profile of the respondents has minute effect to their learning and academic performance. Hence, teachers of Mayapyap National High School shall focus in educating their students according to learning styles with little consideration on the socio-demographic profiles.***

Keywords: Academic Performance, Learning Styles, Auditory Learners, Kinesthetic Learners, Multi-modal Learners

1. Introduction

Academic performance of students serves as barometer of teachers' competence. The learners' performance does not rest solely to educators' capability but also considering students' learning styles. A long line of literatures has established that every student is unique and has various methods of learning and achieving better academic performance. This situation sometimes, if not always, is a setback that every teacher has to dwell and resolve every day of teaching. Lutz (2011) said that each student in a classroom has a unique and complex system of thinking and learning. These varied ways of perceiving information, organizing thoughts and retaining knowledge are called learning styles. Learning styles according to Fleming & Baume, 2006), speaks to the understanding that every student learns differently. Technically, an individual's learning style refers to the preferential way in which the student absorbs, processes, comprehends and retains information. Also, Jiraporncharoen et al. (2015) explained that learning styles are the individual processes used for understanding and retaining information, thereby gaining knowledge or skills. Similarly, Chermahini, Ghanbari, & Talab (2013) stated that learning styles can be described as a set of factors, behaviors, and attitudes that enhance learning in any situation. This, study of Gokalp (2013) stated that learning styles are not really concerned with "what" learners learn, but rather "how" they prefer to learn and it is also an important factor for students' academic achievement and attitudes. Evidently, studies of Yip (2012), Cox (2013), and Lockie, Lanen & Mc Gannon (2013) proved that learning styles or preferences have great impact on academic achievements. In the same way, Choi et al. (2014) stated that students' knowledge of the different learning styles may help improve their academic performance as they learn more about themselves and how to acquire knowledge in the most effective manner. Further, study of Pascual (2014) showed that learning can be happier if the students are allowed to learn at their own pace, at their own preference, and in their own ways.

Teachers' effectiveness rest on their models of learning they use. But, no single method of learning fits to diverse kinds of students. In agreement to Poonam et al. (2013), he pointed out that there is no single best teaching-learning strategy that can work for every student, no matter how good that approach is. Also, Dellosa & Laraya (2011) mentioned that instruction will be more effective if teachers will employ different teaching strategies that will accommodate the different learning styles of the students and minimize mismatches between the prevailing teaching styles as well as the learning styles.

Models on learning are essentials in guiding teachers promote satisfactory academic performance of their students. One of significant forms of learning is the Flemming's Model of Student Learning known as VARK (Visual, Auditory, Reading/Writing Preference, and Kinesthetic) as stated by Fleming & Baume (2006). The Model acknowledges that students have different approaches to how they process information, referred to as "preferred learning modes." It provides scores on each of these four perceptual modes. Individuals have learning style preferences from 1 to all 4 modes; it determines a person's learning style. In support thereto, Tenedero (2011) said that, people prefer to use different sensory modalities when they process information and demonstrate a distinct ability for remembering complex information better or less well by hearing, seeing, or experiencing or mastering it through hands-on learning. Study of Piping (2005) proved that the VARK learning style not only enhances students' understanding but also raises learning motivation and interest among them. In sum, Pritchard (2005) observed that good learning depends on a student's learning style and teaching materials used.

To these, one of the qualities of a premium teacher is the capability to identify learners' method of learning in order facilitate the appropriate approach of instruction; it should the primary concern of a teacher. O'Leary & Stewart (2013) emphasized that even before planning suitable teaching

design, teachers must consider the learning styles of the students. Thus, teachers are encouraged to employ different teaching techniques (Bostrom & Hallin, 2013) to cater to differences among varied learning styles since student's capacity to learn is impacted by the teacher's style of conveying information (Carbonel, 2013).

The aforesaid literature has established the importance of students' learning styles identification in teaching mostly by foreign researchers. Hence, this research sought to assess the learning styles of high school students of Mayapyap National High School in Cabanatuan City, Province of Nueva Ecija and correlate to their academic performance to know whether it would corroborate or deviate with findings of overseas researches. However, the researcher believes that teachers' ability on knowing their students' mode of learning is contributory factor towards attainment of laudable academic performance.

The study, therefore, provided the following problems:

1) What is socio-demographic profile of the respondents in terms of: sex, age, father's educational attainment, mother's educational attainment, and study time?
2) How may the learning styles of the respondents be described in terms of: Auditory, Kinesthetic, Read-write, and Visual?
3) Is there a significant relationship between the profile of the respondents and their learning styles?
4) Is there a significant relationship between the profile of the respondents and their academic performance?

2. Theoretical and Conceptual Framework

This study is anchored on the belief that learning styles are not really concerned with "what" learners learn, but rather "how" they prefer to learn and it is also an important factor for students' academic achievement and attitudes (Fleming & Baume, 2006). Hence, this was based on the VARK model which identifies four primary types of learners: visual, auditory, reading/writing, and kinesthetic. People learn using a variety of these methods, but one method usually predominates. Familiarity with the characteristics of each learning style and associated strategies allow teachers to address the needs of each type of learner and enable students to maximize learning through their dominant learning styles. Figure 1 presents the paradigm of the study.

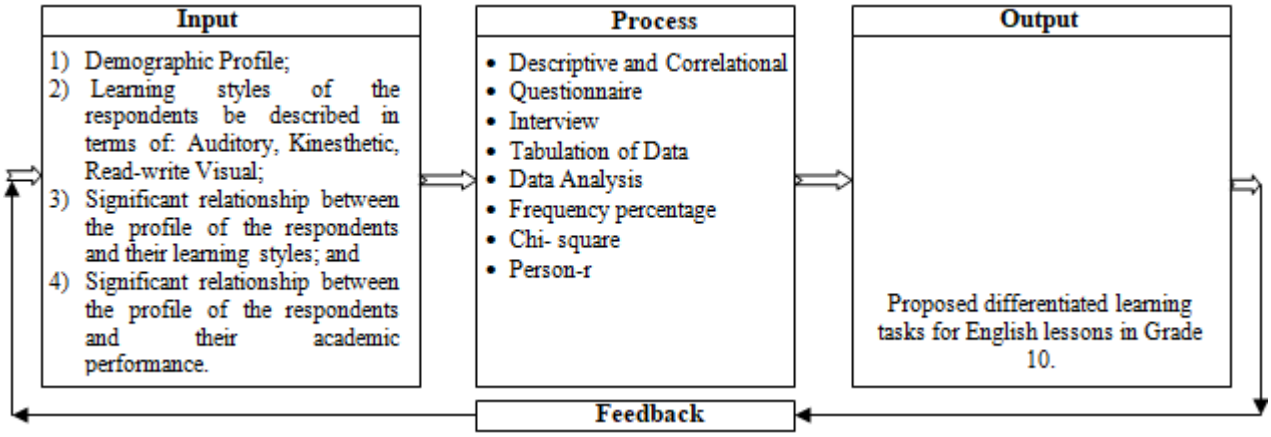

Figure 1: Paradigm of the Study

3. Methodology

This study utilized the descriptive and correlation methods of research. This method involves the collection of data in order to test hypotheses or answer questions. According to Kumar (2014), as cited by Pagandian and Eduardo (2019), this method can systematically describe a situation, problem, phenomenon, service or programs, or provides information or describes the attitude towards an issue. Also, correlation research determines whether a relationship or association exists between two or more variables, but cannot determine if one variable causes another. The researchers do not manipulate any of the variables or put the participants into groups. Although correlation research cannot determine causality, it is useful for predicting the level of one variable based on knowledge of the other variable. The respondents of the study are Grade 10 (Junior High) English students (334) of Mayapyap National High School (MNHS) in the regular classes/sections for the academic year 2017-2018 identified through total sampling. Data were gathered through valid and reliable questionnaire-checklist distributed to the respondents after the approval of the School principal. Also, some of the questions in the checklist were adapted from Response To Intervention (RTI) Learning Styles Inventory 2014 and some questions were constructed by the researcher with the help an expert. Interview of respondents was also conducted. Further, gathered data were statistically treated using frequency percentage, chi- square, and person-r.

4. Results and Discussion

4.1 The Socio-Demographic Profiles of Respondents

Table 1 shows that out of 334 respondents 172 (51.50%) are female while 162 (48.50%) are male which implies that there were higher number of female than male students at MNHS.

4.1.1 According to Sex (S)

Table 1: Respondents According to Sex

Sex	f	%
Male	162	48.50
Female	172	51.50
Total	**334**	**100.00**

The findings is corroborated by the report of Philippine Statistics Authority in 2013 which stated that participation rate of females aged 12 to 15 years old in secondary or high school education (73.8%) was higher than the participation rate of males (62.8%). In all regions, fewer males were attending high school education than females with a ratio ranging from 68 to 95 males for every 100 females.

4.1.2 According to Age (A)

Table 2 reveals that 185 (55.39%) of the respondents were in ages ranging from 14 to 15, and 141 (42.22%) of them were in ages ranging from 16 to 17. There were also seven respondents whose ages ranged from 18 to 19 and only one of them was in the age ranging from 20 to 21. The mean age for grade 10 respondents was 15.53.

Table 2: Respondents According to Age

Age Bracket	f	%
14 – 15	185	55.39
16 – 17	141	42.22
18 – 19	7	2.10
20 – 21	1	0.30
Total	**334**	**100.00**
Mean age: 15.53		

Thus, the results imply that as of the normal age expectation of Department of Education (DepEd) for a learner to finish Junior High School, MNHS is on the right track. Hence, the finding is in accordance to DepEd Order No. 36, s. 2014, Enclosure No. 2, the entrant age for Junior High School is 12 years old, and for Senior High School is 16 years old.

4.1.3 According to Father's Educational Attainment (FEA)

Table 3 shows that majority of the respondents, 145 (43.41%) had fathers who were High School Graduates; 53 (15.87%) had fathers who graduated college; 29 (8.68%) of them had fathers who finished elementary.

Table 3: Respondents According to Father's Educational Attainment of the Respondents

Father's Educational Attainment	f	%
College Graduate	53	15.87
College Undergraduate	43	12.87
Vocational	9	2.69
High School Graduate	145	43.41
High School Undergraduate	39	11.68
Elementary Graduate	29	8.68
Elementary Undergraduate	16	4.79
Total	**334**	**100.00**

This implies that majority of the respondents' fathers finished studying at least until high school and some even went and finished college. However, interview revealed that some of the respondents' fathers who reached college were not able to practice what they have studied; most of the jobs they mentioned are blue collar job, or manual labor, like driving, farming, construction working, etc. Relative thereto, Plumer (2013) stated that only 27 percent of college graduates have a job related to their major.

4.1.4 According to Mother's Educational Attainment (MEA)

Table 4 shows that majority of the respondents' mothers were High School Graduates, 152 (45.51%); followed by College Graduate and High School Undergraduate both having 48 (14.37%). Some of their mothers reached college but did not obtain a degree, 43 (12.87%); 28 (8.38%) of the respondents' mothers finished elementary; and 13 (3.89%) were elementary undergraduates; meanwhile two or 0.60% finished vocational courses.

Table 4: According to Mother's Educational Attainment of the Respondents

Mothers' Educational Attainment	f	%
College Graduate	48	14.37
College Undergraduate	43	12.87
Vocational	2	0.60
High School Graduate	152	45.51
High School Undergraduate	48	14.37
Elementary Graduate	28	8.38
Elementary Undergraduate	13	3.89
Total	**334**	**100.00**

Results show that only 89 out of 334 of the respondents' mothers were not able to finish studying at least until high school. Still, most of the women showed interest in education, this is possibly why as per Philippine Statistics Authority in 2011, both basic and functional literacy rates were higher among female adolescents compared to their male counterparts.

4.1.5 According to Study Time (ST)

Table 5 shows that 156 (46.71%) respondents study in the afternoon; 173 (51.79%) study in the evening and only 5 (1.50%) studies in the morning. This implies that majority of the respondents prefer to study at night. Interview of respondents revealed that studying at night make them (respondents) more focused.

Table 5: Distribution of the Respondents According to Study Time

Study time	f	%
Morning	5	1.50
Afternoon	156	46.71
Night	173	51.79
Total	**334**	**100.00**

In support to the aforesaid findings, Zhang (2012) stated that studying at night may be more beneficial because night-studying will result in more retained information than studying in the morning. Zhang added that studying through the night might not work for everyone, but it will benefit the largest number of students.

4.2 Learning Styles of the Respondents

Table 6 shows that while many of Mayapyap National High School's Grade 10 students had read-write preference with 75 (22%) majority of them were multimodal 113 (33%);

meaning they learn using combinations of different styles. Visual learners make up 63 (18.86%) of the respondents, 55 (16.47%) were auditory learners, and least of all the styles were the kinesthetic learners 28 (8.38%).

Table 6: Distribution of Respondents According to Learning Styles

Learning Styles	f	%
Visual	63	18.86
Auditory	55	16.47
Read-write	75	22.46
Kinesthetic	28	8.38
Multimodal	113	33.83
Total	**334**	**100.00**

The result corroborated the study of Nzesei in 2015 which showed that the most preferred learning style by the students is the multimodal dimension or Visual/Auditory/Kinesthetic. Thus, majority of the students have strong visual, auditory and kinesthetic modalities.

4.3 Significant Relationship between the Respondents' Profile and their Learning Styles

Table 7 shows that only Study Time significantly correlated with read-write (phi.142, .05) learning style. This means that those respondents who study at night more likely preferred read-write learning style.

Table 7: Relationship between the Profile of the Respondents and their Learning Styles

Profile	Visual			Auditory			Read-write			Kinesthetic		
	phi value	Cramers V	p value	phi value	Cramers V	p value	phi value	Cramers V	p value	phi value	Cramers V	p value
S	0.156	0.156	0.581	0.129	0.129	0.854	1.22	1.22	0.894	1.630	1.630	0.540
A	0.389	0.147	0.847	0.437	0.165	0.684	0.37	0.14	0.989	0.413	0.156	0.867
FEA	0.375	0.142	0.933	0.473	0.179	0.328	0.42	0.159	0.827	0.472	0.179	0.342
MEA	0.389	0.159	0.606	0.420	0.171	0.517	0.412	0.168	0.596	0.389	0.159	0.801
ST	0.427	0.342	0.628	0.421	0.374	0.824	0.142**	0.187	0.000	0.821	0.142	0.074

*** .05 Level of significance*

This is probably because tasks like reading a textbook or a journal article, writing a paper, or working on an assignment require a great deal of concentration, and the ability to do focused tasks tends to decline as the day goes on (Thompson, 2017).

4.4 Significant Relationship between the Respondents' Profile and their Academic Performance

Table 8 presents that Sex was significantly correlated with previous General Weighted Average (r=.193) and present General Weighted Average (r=.204), meaning that those female respondents had higher academic performance compared to male counterparts.This implies that female students show more interest in education and are generally more persistent and hardworking as compared to male students. In Functional Literacy, Education and Mass Media (FLEMMS) 2008, women who were considered basically literate (those who can only read and write) were estimated at 26 million (90 for every 100 women), higher than men at an estimated 25 million (87 in every 100 men). This is evident in the elementary and high school completion rates where females were consistently higher than males. Aside from acquiring basic literacy, women with numerical skills (functional literacy) were estimated at 25 million (86 for every 100 women), also higher than men with numerical skill estimated at 24 million (82 for every 100 men).

Table 8: Relationship between the Respondents' Profile and their Academic Performance

Correlations	Previous General Weighted Average	Present General Weighted Average
Sex	.193**	.204**
Age	0.028	0.032
Fathers' Highest Educational attainment	-0.083	-.123*
Mothers' Highest Educational attainment	-0.05	-0.097
Study time	0.256	0.298

Also, Fathers' highest educational status was negatively correlated with the present General Weighted Average, meaning respondents whose father had higher educational qualification had better academic performance. Dickson, Gregg and Robinson (2013) shared that parent who select higher levels of education may also impact their abilities in child-raising or be related to other genetic and environmental factors shared with their children that will lead the children to also achieve higher levels of education. As a result of attaining more education, the parents with high levels of schooling provide a better childhood experience and home environment and consequently their children do better in school.

5. Conclusion

Based on the findings of the study, it concluded that the respondents were of diverse profiles. Grade 10 students of Mayapyap National High School are potential excellent learners of varied academic focus or area considering that they are multi-modal learners. Similarly, they are adaptive to any form of education or training which is advantageous to them as they take their journey to education. Also, the Mayapyap National High School, if they (respondents) continue their study, would produce graduates who could be functional in a variety of course and employment after graduation. However, profile of the respondents has minute effect to their learning and academic performance. Hence, teachers of Mayapyap National High School shall focus in educating their students according to learning styles with little consideration on the socio-demographic profiles.

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