

Multiple Intelligence and Learning Styles of Learners in Online Learning: Basis of Intervention Program

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ABSTRACT

This study aims to determine the multiple intelligence and learning styles among 80 selected grade six students of Private and Public schools in Manila.

The study used the Independent two-tailed test and made use of descriptive-correlational method of research design to determine the significant difference on the Learning styles and Multiple Intelligence of the learners. The p-value is greater than the significance level, which means it is not significant and thus fails to reject the null hypothesis. The Pearson r correlation coefficient was used to measure the significant relationship on the Learning styles and Multiple Intelligence of the learners. The p value is less than the significance level and is significant and it has enough evidence to reject the null. The Kinesthetic Intelligence needs to be developed based on the result that has the lowest score among the selected grade six students and it is recommended for grade six teachers to implement the Theory of Multiple Intelligence and learning styles during online learning. Teachers should make use of a certain strategy to improve kinesthetic Intelligence. For example the teachers could give their students a different project kits they can use at their respective homes virtually.

Keywords: *Teaching and Learning strategies, multiple intelligences, learning styles, learning performances, online learning.*

1. INTRODUCTION

Little to no research has been done on the Theory of Multiple intelligences and different learning styles of the students in the new normal. Due to the transition from face-to-face learning to distance learning, things have changed and become different for various aspects of education. The delivery of learning and teaching modalities have been affected by the global pandemic.

The purpose of this study is to determine the multiple intelligence and learning styles of the learners among the selected grade six students of a private and a public schools in manila and the teacher's observation on the learner's performance in the online distance learning. No to children think and learn the same, all have experienced how it sometimes necessary to present information in a completely different light to reach the student through online learning modalities.

MI theory confirms the empirical experiences and can provide educators with a framework and tools that will allow them to better meet their needs of different types of learners present in every classroom through online learning. Based on the overall findings of the study, the Learning Styles and the Multiple Intelligence that the learners will focused on the kinesthetic/ tactile intelligence because it has a lowest ranked among the areas of intelligence and the researcher will propose the different project kits to improve their tactile/kinesthetic intelligence. Studies show that students have kinesthetic weaknesses have trouble learnings through sense of touch like experimenting some science activities at home and doing exercise sessions like bending their bodies. Studies show that students work better in Kinesthetic/tactile intelligence accompanied by learning motivation will have high learning outcomes enabling them to be physically active and also found to be positive and significant.

The research questions and research objectives are:

- a. What are the learning styles of the Private and Public schools learners using online distance learning?
Research Objectives: To determine these different areas of Learning Styles
 - 1) Visual Learnings Styles
 - 2) Auditory Learning Styles
 - 3) Tactile/ Kinesthetic Learning Styles
- b. Is there a significant differences on the Learning Styles of a Private and Public school learners using online distance learning?
Research Objectives: To determine the significant differences of Learning Styles of a Private and Public school learners using online distance learning
- c. What is the Multiple Intelligence of the Private and Public school learning using online distance learning?
Research Objectives: To determine the Multiple Intelligence of a Private and Public school learning using online distance learning

1) Verbal-linguistic	5) Visual-spatial
2) Mathematical-logical	6) Intrapersonal
3) Musical-rhythmic	7) Interpersonal
4) Bodily-kinesthetic	8) Naturalist
- d. Is there a significant differences on the Multiple Intelligence of a Private and Public school learners using distance learning?
- e. Research Objectives: To know the significant differences on the Multiple Intelligence of a Private and Public school learners using online distance learning.
- f. Is there a significant relationship on the Learning Style and Multiple Intelligence of the learners in online distance learning?
- g. Research Objectives: To know the significant relationship on the Learning Style and Multiple Intelligence of the learners in online distance learning.
- h. What are the observations of teachers on the learner's performance with regards to their Multiple Intelligence and Learning Styles during online distance learning?
Research Objectives: To know the observation of teachers on the learner's performance with regards to their Multiple Intelligence and Learning Style during online distance learning.
- i. Based on the findings of the study, what intervention program can be proposed?

2. METHOD

- a. This study made use of the descriptive made use of the descriptive- correlational method of research design. It is in the sense that the study designed to determine the Multiple Intelligence and Learning Style when grouped according to their profile. It is correlational because it would determine the relationship between the Multiple Intelligence and the Learnings Styles. This method was appropriate since the study involved collection of data in order to determine the nature and degree of existing conditions and attempts to determine the extent to which different variable related with each other.
- b. The researcher went to the two schools personally (Public and Private Schools) and submitted the two hard copies of questionnaires to the respective administrator staffs of the school and the approval letter of request from Department of Education-NCR for permission to conduct survey. Because the researcher had no idea that the Public school had unexpected two (2) weeks holiday vacation (related to National election activities), and also in Private School, the grade six students were busy preparing for their periodical exams and other activities for their upcoming graduation, the researcher was not able to conduct a survey in limited face-to-face class, instead they allowed her to collect data via web-based google form only.
- c. The researcher used purposive sampling method to select the respondents. Forty (40) students each were selected from the public school and the private school. The link of two sets of google form questionnaires were

distributed via emails and FB messengers of the respondents. The students answered the questionnaires without the assistance of their parents or siblings because the researcher had asked each one of them. There were some instructions before answering the web-based via google form questionnaires and informed them the purpose of the study and whatever information was given are just for academic research. Before agreeing to participate by signing the questionnaires, the researcher reminded them to ask any questions regarding the study. The researcher was using a research instrument a 4-point Likert scale Connell Multiple Intelligence Standardized Questionnaire for children and 4-point Likert Scale Assessment of Learning Styles Questionnaire to collect data of Multiple Intelligence and Learning styles of the participants.

- d. The Standard deviation like the weighted mean was used to determine the learning style of the Private School and Public School learners using online distance learning. Independent sample t-test was used to determine the significant difference on the learning style of Private and Public school learners using online distance learning. The Standard deviation like the weighted mean was used to determine the Multiple Intelligence of the Private School and Public School learners using online distance learning. Independent Sample t-test was used to determine the significant difference on the multiple intelligence of Private and Public school learners using online distance learning. The Pearson r correlation coefficient was used to measure the significant relationship between the multiple intelligence and learning styles of Elementary school learners

3. RESULTS AND DISCUSSION

Table 1. Learning styles of the Private School learners using online distance learning (Sacred Heart of Jesus Elem. School)

Learning Style	Standard Deviation (SD)	Weighted Mean (WM)	Interpretation
Visual learning style	0.56	2.95	Good
Auditory learning style	0.53	2.77	Good
Tactile/Kinesthetic	0.62	2.57	Good
Overall	0.57	2.76	Good

Based on the overall mean rating result of 2.76 and overall standard deviation (SD) of 0.57 the researcher concludes that the Private school learners are good in their learning styles.

Table 2. Learning style of the Public School learners using online distance learning (Padre Burgos Elementary School)

Learning Style	Standard Deviation (SD)	Weighted Mean (WM)	Interpretation
Visual learning style	0.59	2.75	Good
Auditory learning style	0.61	2.79	Good
Tactile/Kinesthetic	0.49	2.51	Good
Overall	0.56	2.68	Good

Based on the overall mean rating result is 2.68 and overall standard deviation (SD) of 0.56, the researcher concludes that the Public school learners are good in their learning styles.

Table 3. Significant difference on the learning style of private and public school Learners using online distance learning

Learning Style of Public and Private school learners	T-test Value	P-value	Decision	Interpretation
Visual learning style	-1.554	0.124	Accept the null hypothesis	Not Significant
Auditory learning style	0.156	0.876	Accept the null hypothesis	Not Significant
Tactile/Kinesthetic	-0.460	0.647	Accept the null hypothesis	Not Significant

As can be gleaned from Table 3, the P value was greater than the significance level of 0.05 is not statistically significant and indicates strong evidence for null hypothesis.

Table 4. Multiple intelligence of the private school learning using online distance learning (Sacred Heart of Jesus Catholic School)

Multiple Intelligences of Private School Learners	Standard Deviation (SD)	Weighted Mean (WM)	Interpretation
Verbal-linguistic	0.55	2.85	Good
Mathematical-Logical	0.60	2.60	Good
Musical/ Rhythmic	0.48	2.52	Good
Bodily-Kinesthetic	0.66	2.48	Average
Visual- Spatial	0.59	3.01	Good
Intrapersonal	0.59	2.88	Good
Interpersonal	0.57	2.88	Good
Naturalist	0.75	3.01	Good
Overall	0.60	2.78	Good

Based on the overall mean rating result is 2.78 and overall standard deviation (SD) of 0.60, the researcher concludes that the Private school learners are good in Multiple Intelligences.

Table 5. Multiple intelligence of the public school learning using online distance learning (Padre Burgos Elementary School)

Multiple Intelligences of Public School Learners	Standard Deviation (SD)	Weighted Mean (WM)	Interpretation
Verbal-linguistic	0.71	2.92	Good
Mathematical-Logical	0.71	2.53	Good
Musical/ Rhythmic	0.76	2.61	Good
Bodily-Kinesthetic	0.67	2.49	Average
Visual-Spatial	0.56	2.86	Good

Multiple Intelligences of Public School Learners	Standard Deviation (SD)	Weighted Mean (WM)	Interpretation
Intrapersonal	0.61	2.94	Good
Interpersonal	0.58	2.90	Good
Naturalist	0.65	2.89	Good
Overall	0.66	2.40	Average

Based on the overall mean rating result is 2.40 and overall standard deviation (SD) of 0.66, the researcher concludes that the Public school learners are average in Multiple Intelligence.

Table 6. Significant difference on the multiple intelligence of private and public-school learners using online distance learning

Multiple Intelligences of Public and Private school Learners	T-test Value	P-value	Decision	Interpretation
Verbal-linguistic	0.499	0.619	Accept the null hypothesis	Not Significant
Mathematical-Logical	-0.482	0.631	Accept the null hypothesis	Not Significant
Musical/Rhythmic	0.678	0.500	Accept the null hypothesis	Not Significant
Bodily-Kinesthetic	0.071	0.943	Accept the null hypothesis	Not Significant
Visual-Spatial	-1.124	0.264	Accept the null hypothesis	Not Significant
Intrapersonal	0.478	0.634	Accept the null hypothesis	Not Significant
Interpersonal	0.221	0.826	Accept the null hypothesis	Not Significant
Naturalist	-0.769	0.444	Accept the null hypothesis	Not Significant

As can be gleaned from Table 6, the P value was greater than the significance level of 0.05 is not statistically significant and indicates strong evidence for null hypothesis

Table 7. Relationship on the learning style and multiple intelligence of the learners in online distance learning

Multiple Intelligence and Learning Styles of Public and Private school Learners	Variable 1	Variable 2	r-value	P-value	Decision	Interpretation
Public School (Padre Burgos Elem. School)	Visual learning style	Multiple Intelligences	0.711	0.00001	Reject the null hypothesis	Significant
	Auditory learning style	Multiple Intelligences	0.587	0.000069	Reject the null hypothesis	Significant
	Tactile/ Kinesthetic	Multiple Intelligences	0.620	0.00002	Reject the null hypothesis	Significant
Private School (Sacred Heart of Jesus Catholic School)	Visual learning style	Multiple Intelligences	0.664	0.00001	Reject the null hypothesis	Significant
	Auditory learning style	Multiple Intelligences	0.608	0.000032	Reject the null hypothesis	Significant
	Tactile/ Kinesthetic	Multiple Intelligences	0.616	0.000023	Reject the null hypothesis	Significant

A Pearson correlation coefficient has been tested for this study between Multiple Intelligence and Learning styles of learners in online distance learning.

The result in Table 7 based on the coefficient r and a generated P-Value $<.00001$ using $\alpha = 0.05$ for Visual learning style and Multiple Intelligence in Public elementary school there is a high positive correlation and other categories like Auditory and Kinesthetic/ Tactile have both moderate positive correlation using $\alpha = 0.05$. Based on the findings, the relationship of Visual Learning style and Multiple Intelligence obtain the P value of 0.00001 with r value of 0.711 interpreted with high positive correlation is not statistically significant high correlation between Multiple intelligence and Learning style of Public School learners in the online learning as evidenced by the obtained Pearson moment correlation r coefficient of 711, 587 and 620. In the Private school learners was obtained Pearson moment correlation r coefficient of 664, 608 and 616.

4. CONCLUSION

In view of information, accumulation and investigation of the Multiple Intelligences and Learning Styles of the selected Grade six students of Private and Public Elementary Schools are examined and determined to finish the investigation by the researcher with a few ends. For this purpose, the main tools are the Independent sample t -

test will be used to determine the significant difference between the Learning Styles and Multiple Intelligence of Private and Public school learners using online distance learning. The P values was greater than the significance level, and the result is not statistically significant and indicate strong evidence for null hypothesis. The Pearson r correlation coefficient will be used to measure the significant relationship between the multiple intelligence and learning styles of Elementary school learners. Based on the overall findings of the study, the Learning Style and Multiple Intelligence of students both in Private and Public schools to be least ranked/ lowest in ranked was Kinesthetic/ Tactile Intelligence.

1. The study concludes that both the Private and Public school learners are good in their learning styles in using online distance learning.
2. The study reveals that the Independent two-tailed test used to determine the significant difference on the Learning styles of Private and Public school learners using online distance learning and the P-value is greater than the significance level. It is not statistically significant and indicates strong evidence for null hypothesis.
3. The study concludes that the Private school learners are good in their Multiple intelligence while the Public school learners are average in their Multiple intelligence in using online distance learning.
4. The study reveals the Independent two-tailed test used to determine the significant difference of the multiple intelligence of Private and Public school learners using online distance learning and the P-value is greater than the significance level. It is not statistically significant and indicates strong evidence for null hypothesis.
5. The study concludes the P-value has a high positive correlation and it is not statistically significant relationship between the Learning styles and Multiple intelligence in the online distance learning as evidenced by the obtained Pearson moment correlation.
6. The study concludes that based on the responses of the learners, the teacher's observation on their learner's performance with regards to their learning styles of the Private and Public school learners during online distance learning, all grade six students possess the three learning styles varying degrees. The visual learning style got the highest ranked in learning style while the lowest ranked was tactile/ kinesthetic styles and interpreted with good while the learner's performance with regards to their multiple intelligence of the Private and Public school learners that Visual-spatial and Naturalists got the highest ranked and Kinesthetic/tactile with an average in using online distance learning.
7. The proposal for intervention program reveals the findings of the study that the learners will focus on the kinesthetic/tactile intelligence because it has a lowest ranked among the areas of intelligence and the researcher will propose the different project kits for the learners to improve their tactile/ physical activities in the virtual room during online distance learning.

The implications based on the findings of the study, the students with intelligence in kinesthetic weaknesses have trouble learnings through sense of touch like experimenting some science activities at home and doing exercise sessions like bending and other physical activities. Studies show that students work better in Kinesthetic / Tactile intelligence accompanied by learning motivation will have high learning outcomes enabling them to be physically active and also found to be positive and significant. The recommendation for the learners, the teachers should implement the theory of Multiple Intelligence and Learning styles in the virtual classroom during online distance learning based on the findings of the study that kinesthetic/ tactile intelligence got a lowest score among selected Grade six (6) students. Teachers should make use of a certain strategy to improve the kinesthetic/tactile intelligence and cater for the individual difference of learners like the teachers will give their students a different project kits so that they can perform at their respective homes like modeling clay, using science experiments, encourage arts and crafts activities, creative cutting of shapes or images by using scissors, organizing synchronous sessions like exercise and other activities to make them physically active. In the future, studies should examine the Multiple Intelligences and Learning Styles of the learners especially for the Bodily-kinesthetic/tactile intelligence,

this process can help teacher's accommodation to school learners to express themselves and presenting idea through movement and the body, and give them to make different tactile/ kinesthetic project kits. Some technology tools used to include application for tablets and smartphones that cater to student's tactile senses and abilities to manipulate objects in a virtual classroom through online distance learning or if it's still online learning occurred.

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