MULTIPLE INTELLIGENCES OF THE EDUCATION STUDENTS

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ABSTRACT

Multiple Intelligences (MIs) provides a dimension that every human being differs from one another. This study was conducted to determine the MIs of 167 College of Teacher Education students during the first semester, Academic Year 2013-2014 at Guimaras State College – Mosqueda Campus, Jordan, Guimaras using correlation research design. The instrument used was eight dimensions in the Multiple Intelligences Profiling Questionnaire (MIPQ) of Gardner, adapted from Bermman (1998), McKenzie (1999) and Armstrong (2009). Each type of intelligences consisted of ten statements where students were asked to answer every item of the questionnaire concerning what they feel in their lives. The researchers administered the questionnaire to the respondents using a researcher-made questionnaire. The panel of experts determined the validity of the questionnaire using the eight-point criteria for content validity by Good and Scates and Lawsche's Content Validity Ratio. Cronbach alpha was used to determined the reliability of the questionnaire The statistical tools used were frequency count, percentage, mean, t-test, and Analysis of Variance (ANOVA). Results revealed that majority of the respondents were females, aging between16-25 years old. The respondents showed a strong inclination towards Verbal-Linguistic, Musical, Interpersonal, and Intrapersonal intelligences. Moreover, among the College of Teacher Education students, verbal-linguistic was the dominant intelligence. However, education students showed lowest MIs on Logical-Mathematical, Naturalistic, Visual-Spatial and Bodily-Kinesthetic. Results further showed that verbal-linguistic, musical, interpersonal, bodily-kinesthetic, and logical-mathematical intelligences have a significant relationship in the academic performance of the respondents. It means that the respondents were actively high in some aspects of intelligences but not in others.

Keywords: *Multiple Intelligences, Education, Guimaras State College, Philippines*

INTRODUCTION

Background of the study

One definition of intelligence states that it is not directly observable, concrete and fulfilled, but rather it can be observed through behaviors and is a complex structure that affects our daily and future behaviors (Johnson, 2013). Intelligence is also defined as being able to be discovered, adapted and formed, and has an ability to select context (Sternberg, 2014).

Howard Gardner said that the purpose of learning about Multiple Intelligence (MI) holds that the human mind is composed of eight intelligences. These eight different kinds of intelligences reflect different ways of interacting with the world — and each person has a unique blend of these intelligences. Gardner's argues that intelligences, particularly as it is traditionally defined, does not sufficiently encompass the wide variety of abilities humans display. This approach led to the concept of multiple intelligences, which include:1) Linguistic; 2) Logical-Mathematical; 3) Musical; 4) Spatial; 5) Bodily-Kinesthetic; 6) Interpersonal Intelligence; 7) Intrapersonal Intelligence; and 8) Naturalistic (Armstrong, 2009; Breyer, 2014; Gardner, 1993).

In becoming a multiple intelligences school, Hoerr (2018) writes that the theory of multiple intelligences (MIs) brings a pragmatic approach to how we define intelligence and allows us to use our students' strengths to help them learn. Students who read and write well are still smart, but they are joined by other students who have different talents. Through MI, schools and classrooms become settings in which a variety of skills and abilities can be used to learn and solve problems. Being smart is no longer determined by a score on a test; being smart is determined by how well students learn in a variety of ways.

Based on an investigation done by Kaur (2014), respondents have average levels of intelligence for all the eight components of Gardner's multiple intelligences. According to the theory, everyone possesses all types of multiple intelligences: however, the extent to which each has developed in an individual varies from person to person (Gardner, 1983).

In 2010, Bas and Beyhan presented findings based on their study using the Multiple Intelligences theory in learning English. They determined that MI-based learning is more effective in terms of student achievement levels and their attitudes toward learning. Their research supports Gardner's assertion that MI-based learning will serve students well.

The challenge, therefore, for Guimaras State College as a teaching-learning institution, is to determine the multiple intelligences among their college students.

Statement of the Problem

The study focused on identifying the multiple intelligences of Teacher Education students of Guimaras State College based on the Multiple Intelligences Profiling Questionnaire (MIPQ) for the first semester of the Academic Year 2013-2014. Specifically, it aimed to answer the following questions: 1) What is the profile of the Education Students when categorized as to age and sex? 2) What is the level of Intelligences of the students when categorized as to the eight types of Multiple Intelligences? 3) What is the academic performance of the Teacher Education students when taken as a whole? 4) Are there significant differences in the Multiple Intelligences of Teacher Education students when classified according to age and sex? 5) Is there a significant relationship between students Multiple Intelligences and their Academic Performance? 6) Is there a significant relationship between the multiple Intelligences of the Teacher Education students?

METHODOLOGY

This study employed the descriptive-correlational research design in which two or more quantitative variables from the same group of subjects were determined whether there is a relationship between the variables. Only a single survey was done. The respondents of the study were the 167 College Teacher Education students, with 19 males and 148 females, from first to fourth year, enrolled at Guimaras State College–Mosqueda Campus during the first semester of Academic Year 2013-2014. The instrument used was the eight dimensions in the MIPQ of Gardner, adapted from Berman (1998), McKenzie (1999) and Armstrong (2009). Each type of intelligence consisted of 10 statements where students were asked to answer every item of the questionnaire concerning what they feel in their real lives. Their responses were scaled from 1 to 5, wherein, five described as accurately, four as pretty well, three for somewhat, two as very little, and one do not relate at all. The panel of experts determined the validity of the content of the questionnaire using the Eight –Point Criteria for content validity by Good and Scates and by using Lawsche's Content Validity Ratio. The researchers asked permission from the College President to simultaneously conduct the study on the Multiple Intelligence to all the students of Guimaras State College Mosqueda Campus. The researchers administered the questionnaire to the respondents using a researcher-made questionnaire. In determining the reliability of the questionnaire, the Cronbach Alpha method was used. This method is regarded by many as the best method for measuring reliability because all data could

be denoted. The obtained r is .84 which denotes high correlation. Filled-up questionnaires were immediately collected from the respondents. The data gathered were sorted, tabulated and analyzed using the Statistical Package for Social Sciences (SPSS) software program. The statistical tools used were frequency count, percentage, mean, rank, standard deviation, t-test, ANOVA, and Pearson r.

RESULTS AND DISCUSSION

Profile of the Respondents. Table1 presents the profile of the respondents served as the gauge in determining how the respondents vary in characteristics and multiple intelligences. Results show that majority of the respondents have ages between 16-25 years old (158 or 94.6%) while the rest have ages 26 years old and above. The data show that the respondents are within the age bracket for College students though there some who have ages 26 years old and beyond which are much older that those supposed to be in College which ranges from 18-21 years old. However, when the respondents were grouped according to sex, majority was female (148 or 88.6). This only further shows the preference of women in the teaching profession.

Table 1. Profile of the Respondents

Categories	Frequency	Percentage
Age		
16-25 year old	158	94.6
26 year old and above	7	4.2
Did not indicate	2	1.2
Total	167	100.0
Sex		
Male	19	11.4
Female	148	88.6
Total	167	100.0

Level of Multiple Intelligences of the Student's. Table 2 presents the level of MIs. of the students when categorized as to the eight (8) dimensions of Multiple Intelligences. The results of this study showed that the four highest Multiple Intelligences were Verbal-Linguistic (M=3.44), followed by Musical (M=3.41), Interpersonal and Intrapersonal having a mean of 3.39 each, respectively. Furthermore, results showed that musical, interpersonal, and intrapersonal intelligences closely followed musical intelligence, which means that the respondents are not only sensitive to language, meanings, and relationships of words, susceptible to rhythm but are also sensitive to others' feelings and have a sense of self.

Looking closely into the individual responses in the verbal linguistics category, results revealed that the respondents have the tendency to learn fast when listening to lectures and discussions. Likewise, they are good at explaining and are very good at expressing themselves orally or in writing. The mean of 3.44 with a verbal description of very good simply means that the students are verbally intelligent, that speaks of their chosen field pursued in College. As to Musical Intelligence, results showed that the respondents are sensitive to sounds or are musically inclined. Likewise, they are fairly good at playing an instrument and can sing on key. The overall mean of 3.41 demonstrated that the respondents are very good at this intelligence.

In terms of Interpersonal Intelligence, the respondents' intelligence was described as very good in working effectively with others, giving pieces of advice, and having several close friends which simply shows that they are interested in socializing with others. For the rest of the items, they were described as

good. On the other hand, for Intrapersonal Intelligence, the respondents' intelligence were described as very good in working effectively with others, giving pieces of advice, and having several close friends and also means that they are interested in socializing with others while the rest of the items they exhibit good MI.

The four lowest MIs were Bodily-Kinesthetic, with a mean of 3.37; Visual-Spatial, having an average of 3.34; Naturalistic, with an average of 3.33; and Logical-Mathematical, having an average of 3.27. This shows that they are less motivated or less interested with activities involving abstract thinking, ecological issues, and mental abilities to coordinate body movements. In terms of Visual-Spatial Intelligence, results showed that the respondents are very good in art appreciation, visual records of things, and geometry lessons and good for the rest of the items. For Bodily-Kinesthetic Intelligence, results showed that the respondents are very good in sports and other physical activities and expressing themselves through gestures. For the rest of the items, the respondents exhibited good MI.

With regard to Naturalistic Intelligence, results showed that the respondents are very good in keeping pets, recognizing names of plants, understanding global and human issues, as well as conservation of natural resources, while they exhibit well in topics concerning environmental issues and subjects related to environmental science. As to Logical-Mathematical Intelligence, results showed that the respondents cannot efficiently perform well. The respondents are very good at balancing their school allowances, and for the rest of the items, they exhibited good. The overall mean for this intelligence (M=3.27) showed that the respondents have a verbal description of good.

Gardner posited that intelligence was multifaceted, taking into account the fact that each human had definite intelligence/s, similar to having a definite personality (Gardner, 1998).

Table 2.Summary of Multiple Intelligence's Mean

Multiple Intelligence	Mean (scale 0-5)	Interpretation	Rank
Verbal-Linguistic	3.44	Very Good	1
Logical-Mathematical	3.27	Good	8
Visual-Spatial	3.34	Good	6
Musical	3.41	Good	2
Bodily-Kinesthetic	3.37	Good	5
Interpersonal	3.39	Good	3.5
Intrapersonal	3.39	Good	3.5
Naturalistic	3.33	Good	7

Scale: 0-1.79 (Poor); 1.80-2.59 (Fairly Good); 2.60-3.39 (Good); 3.40-4.19 (Very Good), 4.20 - 5.0 (Excellent)

Academic Performance. Table 3 shows the academic performance of the students. The overall mean of their academic performance was 1.82 which denoted an average performance of the subjects of the study. Majority of the students have grade point average ranging from 1.6 to 2.5 described as good (146 or 87.4%). The percentage of very good performer with grade point average between 1.1 to 1.5 and those with fair performance (2.1 to 2.5) more or less has similar frequency of 6 (6.6%), respectively. It was seen in the evaluations carried out following MIT implementation that the success rates increased substantially every year, and consequently the theory had a positive impact on students' achievement performances (Harriman, 2010).

Table 3. Academic Performance of Education Students

Average Performance	f	%
Fair (2.5 to 2.1)	10	6.0
Good (2.0 to 1.6)	146	87.4
Very Good (1.5 to 1.1)	11	6.6
Total Mean = 1.82, SD = .181 (Good)		
Total	167	100.0

Significant difference in Multiple Intelligences of Teacher Education students when grouped according to age and sex

The level of significance on the MIs of the students when grouped according to age showed p-value of .069 while when categorized as to sex, the p-value was 0.105 all indicated a not significant difference, thus, the null hypotheses denoting a significant difference between MI and these two variables is rejected. Given the descriptive statistical results, it shows that sex and age of the respondents do not have bearing on their multiple intelligences. The respondents whether a boy or girl with age variation has the same MI.

Table 4.T-test results for the difference in Multiple Intelligences when grouped according to age and sex

Particular	t	Df	p-value	Interpretation
Age				
Equal variances assumed	-1.832	163	.069	Not Significant
Sex				
Equal variances assumed	1.631	165	.105	Not Significant

**<.05 significance*

Differences between Students Multiple Intelligence and their Academic Performance

Table 5 presents the differences between multiple intelligence and academic performance of the respondents. On the Logical-Mathematical intelligence (N2), results showed that there is a significant difference between their logical-mathematical Intelligences and academic performance (SD= .034). It means that the students are less engaged in activities under Logical-Mathematical intelligences but more interested with other multiple intelligences such as verbal-linguistics and others.

Table 5. Differences in Multiple Intelligence and academic performance of the students

Multiple Intelligences		Sum of Squares	Df	Mean Square	F	SD
Verbal-Linguistic	Between Groups	.940	2	.470	1.433	.242
	Within Groups	53.824	164	.328		
Logical-Mathematical	Total	54.764	166			
	Between Groups	2.620	2	1.310	3.439	.034*
Visual-Spatial	Within Groups	62.473	164	.381		
	Total	65.093	166			
	Between Groups	.825	2	.412	1.123	.328
Musical	Within Groups	60.190	164	.367		
	Total	61.015	166			
	Between Groups	.196	2	.098	.152	.859
Bodily-Kinesthetic	Within Groups	106.115	164	.647		
	Total	106.311	166			
Interpersonal	Between Groups	1.051	2	.526	1.340	.265
	Within Groups	64.333	164	.392		
	Total	65.384	166			
Intrapersonal	Between Groups	.024	2	.012	.032	.969
	Within Groups	62.104	164	.379		
	Total	62.128	166			
Naturalistic	Between Groups	.175	2	.087	.208	.813
	Within Groups	68.550	163	.421		
	Total	68.725	165			
	Between Groups	1.533	2	.766	1.159	.222
	Within Groups	82.725	164	.504		
	Total	84.258	166			

**<.05 significance*

Relationship among the Multiple Intelligences (MIs) of the respondents

Table 6 presents the relationship between the MIs. of the education students. Results showed that Verbal-Linguistic, Musical, Interpersonal, Bodily-Kinesthetic, and Logical-Mathematical have a significant relationship with one another, while other categories did not show any significant relationships when administered with one another. It means that there are MI's when paired with other MIs depicted a positive relations as in the case of verbal-linguistics and Musical, interpersonal and intrapersonal and so on. It means that the respondents were good in some aspects of intelligence but not so good in others and was further enhance once grouped with other similar MIs.

Table 6. Relationship on multiple intelligences

Multiple Intelligence		Significance
Verbal-Linguistic	Pearson Correlation	.254
	Sig. (2-tailed)	.001*
	N	167
Musical	Pearson Correlation	.336
	Sig. (2-tailed)	.000*
	N	167
Interpersonal	Pearson Correlation	.175
	Sig. (2-tailed)	.024*
	N	167
Intrapersonal	Pearson Correlation	-.075
	Sig. (2-tailed)	.337
	N	167
Bodily- Kinesthetic	Pearson Correlation	.177
	Sig. (2-tailed)	.022*
	N	167
Visual- Spatial	Pearson Correlation	.092
	Sig. (2-tailed)	.235
	N	167
Naturalistic	Pearson Correlation	.083
	Sig. (2-tailed)	.288
	N	167
Logical- Mathematical	Pearson Correlation	.242
	Sig. (2-tailed)	.002*
	N	167

**<.05 significance*

CONCLUSIONS

Majority of the respondents are females aging between 16 to 25 years old. BEEd has the biggest population students. Most of the respondents' parents were not able to finish high school and have a family monthly income of below the minimum wage. The respondents showed a strong inclination towards Verbal-Linguistic, Musical, Interpersonal, and Intrapersonal intelligences. The academic performance of Teacher Education students is independent of their age and sex. Verbal-Linguistic, Musical, Interpersonal, Bodily-Kinesthetic, and Logical-Mathematical intelligences have a significant relationship when paired with other MIs of the respondents. MI as a tool proven what have already been discovered about individual differences.

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