Multiple Intelligences of Teacher Education Students: Their Relationship to Academic Performance

Erlyn F. Lauron and Teresita A. Oducado
Capiz State University - Dumarao Satellite College

Abstract

This paper presented the multiple intelligences possessed by Teacher Education students of Capiz State University, Dumarao Satellite College, Dumarao, Capiz, School Year 2016-2017. Stratified sampling was used in getting the number of respondents and questionnaire in gathering the data. Descriptive and statistical analyses were used to analyze the data. The respondents were 157 BSEd and BEEd students. Majority of them were females and belonged to age ranging from 16-21 years old. As to the dominant intelligence of the respondents, the level of musical a intelligence was "High". When taken as a group, the respondents' dominant intelligence was the musical intelligence whole spatial-visual intelligence was the least dominant. However, when taken as a group both BSEd and BEEd respondents dominantly possessed musical intelligence; however, BSEd respondents possess the least intelligence in spatial-visual while the BEEd are least in logical-mathematical intelligence. There was a significant association between the age and level of naturalistic intelligence, age and the level of musical intelligence and course and gender andlevel of logical-mathematical intelligences of the respondents. The rest of the personal-related factors have no significant association. There was no significant association between the multiple intelligence and academic performance of the respondents.

Keywords: Academic performance, MI theory, multiple intelligences, and Teacher Education students

Corresponding author: Erlyn F. Lauron, MS
Address: Capiz State University - Dumarao Satellite College, Dumarao, Capiz, Philippines
E-mail: erlyn2016@yahoo.com

ISSN 1908-2843 Print

Introduction

As we embrace the global 21st century society demands, we need to cope also with changes, and differences, whether emanating from the individuals around us, or from the physical and unseen environments. Recognizing that each individual serves a purpose and that the classroom and school of the 21st century are "diversity mirrors" of our world, then it becomes only logical that there is a need for a broader conceptual framework for teaching and learning (McFarlane, 2011).

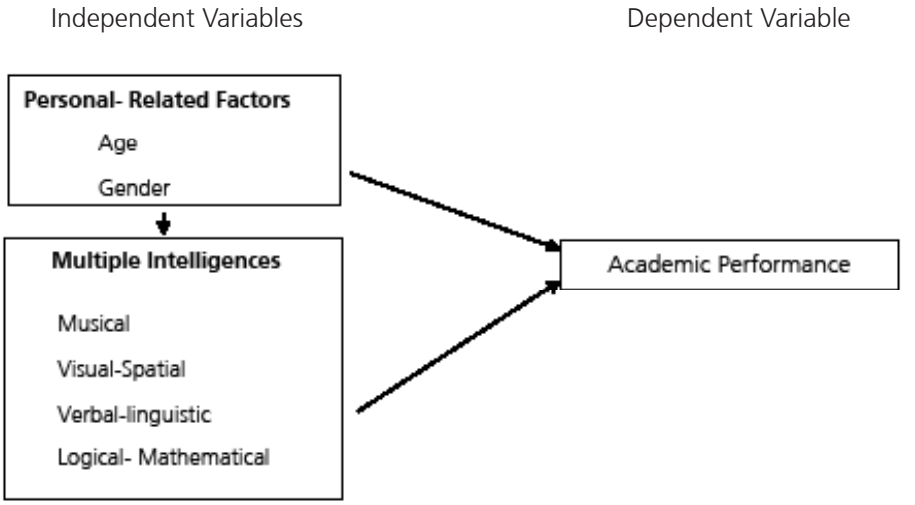
Multiple Intelligences (MI) theory offers the opportunity to develop our perspectives, selves and institutions by allowing us to recognize and appreciate an expanse of human skills and abilities (Ibnian, 2013). It differentiates intelligence into specific modalities, rather than seeing intelligence as dominated by a single general ability (Amacha, 2016). In addition, Multiple Intelligences theory encourages teachers to expand their repertoire of techniques, tools, and strategies beyond the typical linguistic and logical ones used predominantly in classrooms (Mallonee, 1997).

Since school is responsible for helping all students to discover and develop their talents or strengths. Teachers interpret Multiple Intelligences theory as an instructional process that provides numerous entry points into lesson content. In the same way, teachers can apply this theory where they have to consider as most appropriate for their students, school, and community.

Thus, this study aimed to determine the multiple intelligences of Teacher Education students and their relationship to academic performance of Capiz State University, Dumarao Satellite College, Dumarao, Capiz Second Semester school year 2015-2016. Specifically, it sought to answer the following questions: 1) What is the profile of the respondents when grouped according to their personal related factors such as age, sex and course? 2) What is the dominant multiple intelligences of the respondents when taken as a whole and when classified according to age, sex and course? 3) Is there significant association between the multiple intelligences of BEEd and BSEd students? 4) Is there significant association between respondents' profile and multiple intelligences? 5) Is there an association between respondents' multiple intelligences and their academic performance?

This study was anchored on the theory of Howard Gardner (1983) that states "there are many types of talents or knowledge that help in enriching one's life and in responding effectively to his environment' (Multiple Intelligences, 2016). He asserts that humans have different forms of intelligence or intellectual strengths and that each one of these strengths has its own developmental path (Lucas, 2014).

Conceptual Framework



Methodology

This study employed a descriptive/correlational research design and was conducted in the Teacher Education Department of Capiz State University, Dumarao Satellite College, Dumarao, Capiz, school year 2016-2017. The respondents of the study were BEEd and BSEd students who were enrolled on the second semester, school year 2015-2016 were selected using the random sampling.

Multiple Intelligences Index used by Aposin (as cited in Damaso, 2013) was used to determine the multiple intelligences of the respondents. Mean, frequency counts and percentage were used to describe the variables while chi-square was used to associate the socio-demographic factors and the multiple intelligences of the respondents

Results and Discussion

Sex

Majority of the respondents were female (132, 84.08%) while 25 (15.92%) were males.

Age

Out of 157 respondents, 133 (84.71%) belonged to age ranging from 16-21 years old, 19 (12.10%) from 22-27 years old and 5 (3.19 %) were 28-33 years old, respectively.

Course

Majority (82%) of the respondents were BSEd and 75 (47.77%) were BEEd students.

Table 1. Socio-Demographic profile of the respondents

Socio-Demographic Profile	Frequency (n=157)	Percentage (100%)
Age		
16-21 years old	133	84.71
22-27 years old	19	12.10
28-33 years old	5	3.19
Sex		
Male	25	15.92
Female	132	84.08
Course		
BSEd	82	52.23
BEEd	75	47.77

Multiple Intelligences of the Respondents

The result shows that the multiple intelligences possessed by the respondents and the distribution as to what forms of multiple intelligences are common to them. Majority of the respondents had a musical intelligence with the mean result of 3.68, this means that the respondents have skills in performance, composition, and appreciation of musical patterns. They were sensitive to sounds, rhythms, tones, and music.

Verbal-Linguistic Intelligence of the Respondents

Results showed that when taken as a whole, the mean result is 3.60 which means that the level of verbal-linguistics of the respondents was "High",17 (10.83%) were classified as "Very High"; 80 (50.96%) ,"High";42 (26.75%), "Average"; 18 (1.46%), "Low" .

Logical -Mathematical Intelligence of the Respondents

Results showed that when taken as a whole, the mean result was 2.78, which means that the level of logical -mathematical intelligence of the respondents was "Average". Out of 157 respondents ,22 (14.01%) were classified as " High"; 10 (6.37%) ,"Very High"; 51 (33.48%) , "Average"; 52 (33.12 %), "Low"; and 22 (14.01) , "Very Low".

Visual-Spatial Intelligence of the Respondents

When respondents were taken as a whole, the mean result was 3.23 classified as "Average". Out of 157 respondents ,17 (10.83%) were classified as " Very High"; 41 (26.11%), "High"; 56 (35.67.%), "Average"; 5 (3.18 %), "Very Low"; and 38 (24.20), " Low".

Bodily- Kinesthetic Intelligence of the Respondents

When respondents were taken as a whole, the mean result is 3.34, which means that the level of bodily kinesthetic intelligence of the respondents was "Average". Out of 157 respondents, 12 (7.64%), " Very High"; 51 (32.48%),"High"; 63 (40.13.)%, "Average"; 29 (8.47%), "Low"; and 2 (1.27), " Very low".

Musical Intelligence of the Respondents

When respondents were taken as a whole, the mean result is 3.68. This means that the level of musical intelligence of the respondents was "High". Out of 157 respondents 37 (23.57%), " Very High"; 50 (31.85%), "High"; 59 (37.58%), "Average"; 8 (5.1 %), "Low" and 3 (0.64), " Very low".

Interpersonal Intelligence of the Respondents

When respondents were taken as a whole, the mean result is 3.65. This means that respondent's level of interpersonal intelligence was "High". Out of 157 respondents 30 (19.11%), " Very High"; 59 (37.58%), "High"; 55 (35.03%) were classified as average, 12 or 7.64 % were classified as "Low" and 1 (0.64%), " Very low".

Intrapersonal Intelligence of the Respondents

The mean result is 3.50 when respondents were taken as a whole. This means that the level of intrapersonal intelligence of the respondents was "High". Out of 157 respondents 26 (16.56%) were classified as " Very High", 52 or 33.12% were classified as "High", 55 or 35.03 .% were classified as average, 21 or 713.38 % were classified as "Low" and 3 or 1.91 % were classified as " Very low".

Naturalistic Intelligence of the Respondents

As to naturalistic intelligenece, the mean result is 3.52. This means that respondents' level of naturalistic intelligence was "High". Out of 157 respondents 32 or 20.38% were classified as "Very High"; 43 (27.39%) "High"; 58 (36.94 .%) "Average"; 21 (13.38 %) "Low"; and 3 (1.91) "Very low".

Mean Summary of Multiple Intelligences and their Rank
When Classified According to Group

Table 2 shows the mean summary of multiple intelligences and their rank when classified according to group. Data revealed that both BSEd and BEEd respondents dominantly possessed Musical Intelligence with the means of 3.66 and 3.69, respectively. Both have least Logical- Mathematical Intelligence with the mean of 2.70 and 2.45, respectively.

The mean summary of respondents' multiple intelligences and their rank as classified into group is presented in Table 2.

Table 2. Mean Summary of Multiple Intelligences and their rank when classified cccording to group.

	Rank	Multiple Intelligence	Mean	Interpretation
BSEd	1	Musical	3.66	High
	2	Interpersonal	3.63	High
	3	Verbal-Linguistic	3.58	High
	4	Intrapersonal	3.53	High
	5	Naturalist	3.45	High
	6	Bodily-Kinesthetic	3.31	Average
	7	Logical-Mathematical	3.21	Average
	8	Spatial-Visual	2.70	Average
BEEd	1	Musical	3.69	High
	2	Interpersonal	3.68	High
	3	Verbal-Linguistic	3.63	High
	4	Naturalistic	3.59	High
	5	Intrapersonal	3.47	High
	6	Bodily-kinesthetic	3.37	High
	7	Spatial- Visual	3.25	Average
	8	Logical-Mathematical	2.45	Low

Mean Summary of Multiple Intelligences and Their Ranks

Table 3 shows the types of multiple intelligences, mean and ranks. Musical intelligence was the dominant intelligence possessed by the respondents with a mean of 3.68; interpersonal intelligence, 3.65; verbal–linguistic intelligence, 3.60; naturalistic intelligence, 3.52; intrapersonal intelligence, 3.50; bodily-kinesthetic intelligence, 3.34; visual-spatial intelligence, 3.23; and logical-mathematical intelligence, 2.87.

Table 3. Mean Summary of the level Multiple Intelligences and their ranks

Rank	Multiple Intelligence	Mean	Interpretation
1	Musical	3.68	High
2	Interpersonal	3.65	High
3	Verbal-Linguistic	3.60	High
4	Naturalistic	3.52	High
5	Intrapersonal	3.50	High
6	Bodily-Kinesthetic	3.34	Average
7	Visual-Spatial	3.23	Average
8	Logical- Mathematical	2.87	Average

Association between socio-demographic profile and level of multiple intelligences

Gender and Logical-Mathematical Intelligence

Table 4 revealed that there is significant association between sex and logical-mathematical intelligence of the respondents. The computed chi-square value of 12.41 is greater than the critical value 9.488 with 4 degrees of freedom at 5% level of significance. This means that the sex of the respondents has something to do with their level of logical-mathematical intelligence.

This conformed to the study of Loori (2005) where he found that males showed higher preference in logical/mathematical intelligence. In the study of Ravi et al. (2009), he found that gender has significant difference in eight multiple intelligences except verbal & interpersonal. He noted that male participants gave higher scores than females.

Table 4. Association between sex and Logical-mathematical intelligence.

Age	Level of Intelligence					Total
	Very High 4.21- 5.0	High 3.41-4.20	Average 2.61-3.40	Low 1.81-2.60	Very Low 1.0-1.80	
16-21 y/o	26	35	52	18	2	133
22-27 y/o	6	7	4	1	1	19
28-32 y/o	0	1	2	2	0	5
Total	32	43	58	21	3	157
Mean= 19.70						

Computed x2 value = 12.41 critical value= 9.488
df= 4 Level of Significance = 0.05

Course and Logical- Mathematical Intelligence

Table 5 showed that there is significant association between course and logical-mathematical intelligence. The computed Chi-square value of 17.93 is greater than the critical value 9.488 with 4 degrees of freedom at 5% level of significance. This means that the course of the respondents is independent to their level of logical-mathematical intelligence.

Table 5. Association between course and logical- mathematical intelligence

Age	Level of Intelligence					Total
	Very High 4.21- 5.0	High 3.41-4.20	Average 2.61-3.40	Low 1.81-2.60	Very Low 1.0-1.80	
BSED	4	10	25	28	15	82
BEED	6	12	26	24	7	75
Total	10	22	51	52	22	157

Computed x2 value =17.93 critical value=9.488
df= 4Level of Significance = 0.05

Age and Musical Intelligence

Table 6 presents that there is significant association between age and musical intelligence of the respondents, its computed chi-square value of 16.35 is greater than the critical value 15.507 with 8 degrees of freedom at 5% level of significance. This conformed to the study of Ravi et al. (2009) where age made significant difference in verbal and musical intelligences of the respondents.

Table 6. Association between age and musical intelligence.

Age	Level of Intelligence					Total
	Very High 4.21- 5.0	High 3.41-4.20	Average 2.61-3.40	Low 1.81-2.60	Very Low 1.0-1.80	
16-21 y/o	28	44	51	8	2	133
22-27 y/o	9	4	6	0	0	119
28-32 y/o	0	2	2	0	1	5
Total	37	50	59	8	3	157
Mean= 19.70						

Computed x2 value =16.35 critical value=15.507
df=8Level of Significance= 0.05

Age and Naturalistic Intelligence

Table 7 revealed that there is significant association between the respondents' age and level of naturalistic intelligence. Age has something to do with the level of naturalistic intelligence of the respondents. This conformed to the study of Menevis and Ozad (2014) who found out a statistically significant differences for naturalistic intelligence according to age.

Table 7. Association between age and naturalistic intelligence.

Age	Level of Intelligence					
	Very High 4.21- 5.0	High 3.41-4.20	Average 2.61-3.40	Low 1.81-2.60	Very Low 1.0-1.80	Total
16-21 y/o	26	35	52	18	2	133
22-27 y/o	6	7	4	1	1	19
28-32 y/o	0	1	2	2	0	5
Total	0	1	2	2	0	157
Mean= 19.70						

Computed x2 value =16.35 critical value=15.507
df=8Level of Significance= 0.05

Multiple Intelligences and Academic Performance of the Respondents

Table 8 shows that there is no significant association between the respondents' level of multiple intelligences and academic performance. The computed Chi-square value of 7.81 is lesser that the critical value of 26.2962 with 16 degrees of freedom at 0.05 level significance. This means that the multiple intelligences of the respondents have nothing to do with their academic performance.

It has found that the level of musical intelligence of the respondents was "High". When taken as a group, the respondents' dominant intelligence was the musical intelligence and least in spatial-visual intelligence. However, when taken as a group both BSEd and BEEd respondents dominantly possessed musical intelligence; BSED respondents have least intelligence in spatial-visual while the BEEd are in logical-mathematical intelligence.

There was a significant association between the age and level of naturalistic intelligence, age and the level of musical intelligence, course and level of logical-mathematical intelligence of the respondents. The rest of the personal-related factors have no significant association. There was no significant association between the multiple intelligences and the academic performance of the respondents.

Table 8. Academic Performance and the Level of Multiple Intelligences and of the Respondents .

Academic Performance	Level of Multiple Intelligence: Very High 4.21- 5.0	High 3.41-4.20	Average 2.61-3.40	Low 1.81-2.60	Very Low 1.0-1.80	Total
	f	f	f	f	f	
Outstanding 1.5- 1.74	5	3	1	0	0	9
Very Good 1.75-1.99	18	14	3	0	0	3
Good 2.0- 2.24	32	32	2	0	0	66
Very Satisfactory 2.25-2.49	18	20	0	0	0	38
Satisfactory 2.25-2.74	5	3	1	0	0	9
Total	78	72	7	0	0	157

Computed x2 value = 7.81 critical value = 26.2962
df =16 Level of Significance = 0.05

Conclusions

Result of the study showed that majority were composed of female BSEd fourth year students belonged to age ranging from 16-21 years old. When taken as whole the multiple intelligence of the respondents were musical, interpersonal, verbal-linguistics, naturalistic and intrapersonal intelligences of the respondents categorized as "High". Bodily- kinesthetic, visual-spatial and logical-mathematical intelligences were categorized as "Average. However, when taken as a group both BSEd and BEEd respondents dominantly possessed Musical Intelligence, BSEd respondents had spatial-visual intelligence as their least intelligence, while BEEd had the logical-mathematical intelligence. There was a significant association between the age and level of naturalistic intelligence, age and the level of musical intelligence, course and level of logical-mathematical intelligences of the respondents. The rest of the personal-related factors have no significant association. There was no significant association between the multiple intelligences and the academic performance of the respondents.

Recommendations

Teachers may develop and utilize pedagogies that consciously attempt to engage students in a variety of ways, knowing which intelligences students possess is critical to effective instruction. They may also utilize the MI theory in identifying

the strengths of their students so that they can better prepare engaging and relevant lessons that correlate with those strengths. Administrators may facilitate/initiate the conduct of orientation and seminar on the Multiple Intelligences Theory involving teachers, parents, and other stakeholders.

References

Amacha, R. (2016). Using the Multiple Intelligences Theory in a Classroom. Educator Insights, Teaching Strategies, Atlas. Retrieved from https://www.rubicon.com/multiple-intelligences-theory/ on January 2, 2017.

Damaso, R. (2013). Multiple Intelligence and Academic Performance of High School Student Unpublished thesis. Northern Iloilo Polytechnic State College. Retrieved on March 7, 2016.

Ibnian, S. K. (2013). Implications of Multiple intelligences theory in ELT field. The World Islamic Sciences and Education University (W.I.S.E.) Language Center. International Journal of Humanities and Social Science. Retrieved on March 7, 2016.

Lucas, M. R. (2014). Facilitating Learning: A Metacognitive Process. Lorimar Publishing Corporation. Quezon City, Philippines. Retrieved on March 7, 2016.

Loori, A. (2005). Multiple intelligences: A comparative study between the perspective of male and female. Social Behavior and Personality International Journal. Retrieved on March 7, 2016.

McFarlane, D. A. (2011). Multiple Intelligences: The Most Effective Platform for Global 21st Century Educational and Instructional Methodologies. Spring 2011, 14(2). Retrieved from collegequarterly.ca/2011-vol14-num02-spring/mcfarlane.html on March 7, 2016.

Mallonee, R. L. (1997). Applying Multiple Intelligence Theory in the Music Classroom. ERIC. Retrieved from https://eric.ed.gov/?id=ED411240 on August 26-28, 2016

Menevis, I., & Ozad, B. (2014). Do Age and Gender Influence Multiple Intelligences?. Social Behavior and Personality An International Journal 42(1):9-20. Retrieved from https://www.researchgate.net/publication/279293567_Do_Age_and_Gender_Influence_Multiple_Intelligences on August 26-28, 2016

Multiple Intelligences (2016). Open Textbooks for Hong Kong. The Open University of Hong Kong. Retrieved from http://www.opentextbooks.org.hk/ditatopic/6197 on January 2, 2017

Ravi, A. (2009). Do age and sex of school students significantly differ with their multiple intelligence?I-managers Journal of Educational Psychology. Retrieved from http://eku.comu.edu.tr/index/5/2/asaricaoglu_aarikan.pdf on August 26-28, 2016.