ASSESSMENT ON MULTIPLE INTELLIGENCE AND ACADEMIC PERFORMANCE OF CBMA STUDENTS: BASIS IN THE ENHANCEMENT OF SELF LEARNING MODULE AND PROGRAM CURRICULUM

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ABSTRACT

Many educational institutions believe that education should encompass a variety of methods to reflect students' different learning styles in order to equip students with the skill demand of various activities. This study determined to assess the students' multiple intelligences and academic performance as basis in the enhancement of self-learning module and program curriculum. The multiple intelligences include Intrapersonal Intelligence, Existential Intelligence, Naturalistic Intelligence, Kinesthetic Intelligence, Interpersonal Intelligence, Visual Intelligence, Musical Intelligence, Logical Intelligence, and Verbal Intelligence. The research design used was basically a descriptive method employing an adopted Multiple Intelligences Survey from Walter McKenzie, 1999 of Surfaquarium Consulting. There were 212 respondents from BS in Entrepreneurship and BS in Office Administration. Academic performance of the students in their major subjects got an average of 1.63 and were measured based on the results of the final examinations for first semester of AY 2020-2021. Results showed that the top three intelligences the respondents have based on their scores are intrapersonal intelligence, followed by existential and naturalistic intelligences; least of the intelligences are musical, logical and verbal. This implied that oral communication is part of the required testing because this skill is needed not only in the workplace, to practice face-to-face communication skills which reinforces other skills such as critical thinking and non-verbal communication skills and to develop their verbal ability. There is a need to enhance the course syllabi and integrate the learning methodologies in the self-learning module that utilizes the multiple intelligence.

KEYWORDS: *multiple intelligence, academic performance, CBMA students, course syllabi*

INTRODUCTION

Multiple intelligence (MI) theory has attracted much attention in the field of education, although Howard Gardner as the inventor of this theory, does not intend to create it to apply learning and instruction. The theory was directed at the philosophy of developmental and cognitive psychology Gardner (2011) as a discipline he was interested in since the beginning of his career. Eventually, MI theory became popular in educational practice. The multiple intelligences include Naturalistic Intelligence, Musical Intelligence, Logical Intelligence, Existential Intelligence, Interpersonal Intelligence, Kinesthetic Intelligence, Verbal Intelligence, Intrapersonal Intelligence and Visual Intelligence.

The success of an individual in a chosen profession depends on his skills and abilities. According to Ahvan (2016) multiple intelligences including visual-spatial, verbal-linguistic, interpersonal, bodily-kinesthetic, musical, natural, interpersonal have a positive correlation with academic performance achievement. MI such as visual-spatial intelligence, interpersonal and verbal-linguistic intelligence were statistically significant and could positively predict academic performance achievement, whereas the musical intelligence was a tunable negative predictor for academic achievement of students. This traditional way of defining intelligence serves as the basis on what degree programs a student will be enrolling to prepare for his chosen profession. A

student who is good in language could be journalist, lawyer, teacher and a diplomat. On the other hand, logically inclined students would probably take up engineering, accountancy, statistics, medicine and the like.

The level of intelligence has been associated with the kind of profession an individual must pursue in order to be successful. Students with above average intelligence based on the intelligence quotient (IQ) test are expected to take degrees that are more sophisticated and which requires higher level of thinking. Students should keep abreast with the level of intelligence required to perform satisfactorily in all the requirements leading to a particular degree. For example, a logical student would probably survive in taking up engineering compared to a student who is a linguistic.

Similarly, individuals have varying levels of multiple intelligences. Each of the MI types can serve as gateways to personalize important cognitive and emotional processes that underlie learning such as attention, memory, motivation, creative cognition, problem-solving, and understanding as mentioned by Armstrong (2017). The benefit of embedding MI in learning is that it can easily span diverse cultures because each school represents a cultural system of educational beliefs, social ideas, and practices according to Shearer (2018). An

individual could be linguistic and logical but possess a little of the musical and bodily intelligences.

The researcher aims to assess the multiple intelligences and the academic performance of College of Business and Management (CBMA) students as basis for the enhancement of self-learning module and program curriculum.

METHODOLOGY

This study utilized the descriptive methods of research. Two Hundred Twelve (212) third year level from BS Entrepreneurship and BS Business Administration students are the respondents of the study from the College of Business Management and Accountancy (CBMA). The researcher will employ the Multiple Intelligences Survey from Walter McKenzie, 1999 of Surfaquarium Consulting which has 80 items. On the other hand, the academic performance of the students in their major subjects were measured based on the results of the final grade for first semester of AY 2020-2021.This study used mean, standard deviation, Pearson's *r* and linear regression analysis for the statistical treatment of the data.

RESULTS AND DISCUSSION

The mean average and the standard deviation of the students' MI scores and academic achievement are shown in Table 1 and 2, which reports the students' levels of MI. The significant differences obtained the highest rating of intrapersonal intelligence, 25.0, existential, 18.9, naturalistic, 20.0, kinesthetic, 22.7, interpersonal, 22.5, visual, 27.6, musical, 23.3, logical, 20.7 and verbal 25.1 which reflects the student's level of multiple intelligence.

When considering the level of performance of the students in their major subjects there is a significant difference found with a standard deviation of 0.226.

1. What extent the students possess in the following multiple intelligences namely: Naturalistic Intelligence, Musical Intelligence, Logical Intelligence, Existential Intelligence, Interpersonal Intelligence, Kinesthetic Intelligence, Verbal Intelligence, Intrapersonal Intelligence and Visual Intelligence?

Table 1. Descriptive Statistics of the Independent Variables

Types of Intelligence	M	SD
Intrapersonal	77.4	25.0
Existential	76.0	18.9
Naturalistic	73.8	20.0
Kinesthetic	70.4	22.7
Interpersonal	68.5	22.5
Visual	66.9	27.6
Musical	62.5	23.3
Logical	58.1	20.7
Verbal	53.6	25.1

Note. *N*=121. Each of type of intelligence is measured on a scale of 0–100.

2. What is the level of academic performance of the students in their major subjects?
The 212 respondents of the study got an average of 1.63 in their academic performance with a standard deviation of 0.226.

3. Is there a significant relationship between the extent the student possesses the multiple intelligences and the academic performance?
In order to answer this question, Pearson's *r* was used. Table 2 shows the correlation coefficients between each type of intelligence and the academic performance of the respondents.

Table 2. Correlation of each type of intelligence with Academic Performance

Type of Intelligence	r	p	Strength of correlation
Naturalistic	.151	.098	slight
Musical	.103	.262	slight
Logical	.327**	<.001	low
Existential	.057	.533	slight
Interpersonal	.197*	.030	slight

Kinesthetic	.083	.368	slight
Verbal	.220*	.015	low
Intrapersonal	.361**	<.001	low
Visual	.216*	.017	low

Note. N=121.
*p<.05. **p<.01.

The results show that logical (*r*=.327,*p*<.001), interpersonal (*r*=.197,*p*=.03), verbal (*r*=.22,*p*=.015), intrapersonal (*r*=.361,*p*<.001), and visual (*r*=.216,*p*=.017) types of intelligences are statistically significantly correlated with the performance of students in terms of their GWA.

Naturalistic, musical, existential, and kinesthetic intelligences do not have statistically significant correlation with academic performance.

4.Does the extent the student possess the multiple intelligences predict the academic performance?

To answer this question, a linear regression model was fit into the data. The response variable used in the model was the academic performance of the students while the predictors were the nine types of intelligence. The model fit measures are shown in Table 3 while the regression coefficients and their significance are shown in Table 4.

Table 3. Model Fit Measures

Model	R	R²	Adjusted R²	Overall model test			
				F	df₁	df₂	p
1	0.653	0.427	0.415	3.16	9	111	<.001

Table 3 shows that the regression model accounts for 42.7% of the total variance in the Performance (GWA) of the respondents. The model is also statistically significant (*F*=3.16, p<.001). Overall, the regression model has a good fit.

Table 4. Regression Coefficients

Predictor	B	SE B	t	p
Intercept	1.9730	0.1036	15.095	< .001
Naturalistic	0.0001	0.0014	1.299	0.197
Musical	0.0000	0.0012	-0.056	0.955
Logical	0.0057	0.1327	7.286	< .001
Existential	0.0006	0.0015	-0.463	0.645
Interpersonal	0.0043	0.1120	8.451	< .001
Kinesthetic	0.0001	0.0014	0.077	0.939
Verbal	0.0024	0.0828	9.367	< .001
Intrapersonal	0.0069	0.0912	7.365	< .001
Visual	0.0071	0.1231	6.258	< .001

The significant predictors are logical (*B*=0.0057, *p*<.001), interpersonal (*B*=0.0043, *p*<.001), verbal (*B*=0.0024, *p*<.001), intrapersonal (*B*=0.0069, *p*<.001), and visual (*B*=0.0071, *p*<.001) types of intelligences.

For every one unit increase in the level of logical intelligence, there is a corresponding 0.0057 units increase in the level of performance (GWA) of the respondent. CBMA students has the capacity to understand, reason, and solve problems as well as think logically. As cited by Lynch (2021) ability to solve problems through existing patterns and reasoning methods is thought to be one of the most efficient and vitally important problem-solving methods.

For every one unit increase in the level of interpersonal intelligence, there is a corresponding 0.0043 units increase in the level of performance (GWA) of the respondent. CBMA students has the ability to interact with other students, understand their situations and can build relationship and trust. According to Patrickson (2016) the deeper communication is build, the more it links to commitment. Communicate and

giving feedback regarding their performance, providing information perceive to emerge the level of commitment.

For every one unit increase in the level of verbal intelligence, there is a corresponding 0.0024 units increase in the level of performance (GWA) of the respondent. Verbal intelligence is a predictor in the level of academic performance of the CBMA students. Logsdon (2020) stated that people with strong verbal-linguistic abilities excel in school tasks like reading and writing. Communicate well and are usually good listeners, having a high memory for material read and strong recall of spoken information. Having a good verbal-linguistic intelligence can quickly and accurately respond in any spoken or written instructions.

For every one unit increase in the level of intrapersonal intelligence, there is a corresponding 0.0069 units increase in the level of performance (GWA) of the respondent. CBMA students are aware of their own emotions and sensitive to the feelings of others. They are also intuitive and usually introverted. Intrapersonal intelligence as self-knowledge and the ability to act adaptively on the basis of the knowledge. This intelligence includes having a picture of one's strengths and limitations, awareness of inner moods, intentions, motivations, temperaments, and desires, and the capacity for self-discipline, self-understanding, and self-esteem according to Armstrong (2020).

For every one unit increase in the level of visual intelligence, there is a corresponding 0.0071 units increase in the level of performance (GWA) of the respondent. Visual Intelligence is evident as predictor for the level of performance of CBMA students. Stimulated by powerful information through different aspects like captivating information to create a considerate meaningful experience and the ability to visualize one's perceptions. The ability of students to memorize and retain material from a learning process, the more likely they are to perform better in their studies.

CONCLUSIONS AND RECOMMENDATIONS
The study provided evidence that the intrapersonal and existential intelligence is the student's most frequent intelligence and the logical and verbal is the least frequent intelligence. This could be due to the opportunities and environment available for each intelligence. According to Mojares (2015) intrapersonal strength reflects self-smart the students has the ability to comprehend themselves, to be aware of one's feelings, anxieties and impulses. It was also found out that logical and intrapersonal intelligences can predict the academic performance of the CBMA students. This means that CBMA students has the ability to think logically, reason, and identify connections, recognize patterns with ease, and work well with numbers. They have a very systematic approach to learning and are keeping organized. The researcher also conclude that academic performance has a good fit with regards to multiple intelligence and statistically significant. The result implies that intrapersonal intelligence should be turned to verbal prowess as CBMA students need effective communication skills to succeed in their chosen profession. Therefore, teaching oral communication must focus on the enhancement of verbal-linguistic intelligence and interpersonal intelligence. Thus, it would be better if another study would be undertaken focusing on the employment of MI teaching methods for both BS Entrepreneurship and BS Office Administration programs. It was also recommended to enhance the course syllabi and apply the teaching methodologies on multiple intelligences, develop instructional materials that focuses on MI and develop concepts and teaching techniques of multiple intelligence.

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