

# **MULTIPLE INTELLIGENCES AMONG INDUSTRIAL TECHNOLOGY STUDENTS**

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## **ABSTRACT**

This study was conducted during the first semester, Academic Year 2013-2014 at Guimaras State College - Mosqueda Campus. Specifically, it determine the profile of Industrial Technology. The respondents were the Industrial Technology students. This study used descriptive co relational research design. The study revealed that most of the respondents were male aging 16-25 whose parents were not able to finish high school and with the family income of 1,300 and below. Results further revealed that sex, year level, and parents' educational attainment are factors which affect the academic performance of the students. Among the Industrial Technology students, the Intrapersonal is the dominant intelligence. This implies that this group of students is self-motivated individuals. It was also found out that verbal-linguistic intelligence has a significant relationship in the academic performance. However, the other intelligences must not be taken for granted. Hence, the administration of GSC especially the teaching personnel must structure their courses and programs which will cater the intelligences of their learners.

**KEYWORDS:** Multiple Intelligences, Industrial Technology, Guimaras State College

## **INTRODUCTION**

### **Background of the study**

When we hear the word intelligence, the concept of IQ testing may immediately come to our mind. The traditional assumption about intelligence is that it is a single, unchanged, inborn capacity. These intelligences can be measured using tests like Stanford-Binet with results showing the traditional idea of IQ. "Those tests measure only logic and language, leaving out a whole lot of other capacities that the human brain has to offer," (Richards & Rodgers, 1986).

Gardner's theory argues that intelligence, particularly as it is traditionally defined, does not sufficiently encompass the wide variety of abilities humans display. This theory led to the concept of multiple intelligences (Gardner, 2000).

The Multiple Intelligences Model is one of a variety of learning style models that have been proposed in general education with follow-up inquiry by language educators. (Alcantara, et al., 2003) The following are the intelligences: (1) Logical-Mathematical Intelligence is the ability to detect patterns, reason deductively and think logically. Most often associated with scientific and mathematical thinking. (2) Linguistic Intelligence is the ability to use language masterfully to express oneself rhetorically or poetically. Also allows one to use language as a means to remember information. (3) Spatial Intelligence is the ability to manipulate and create mental images in order to solve problems. Not limited to visual sight, Gardner noted that blind children can possess spatial intelligence. (4) Musical Intelligence is the ability to read, understand, and compose musical pitches, tones, and rhythms. (Audio functions are required for a person to develop this intelligence in relation to pitch and tone, but it is not needed for the knowledge of rhythm.) (5) Bodily-Kinesthetic Intelligence is the ability to use one's mind to control one's bodily movements. (6) Interpersonal Intelligence is the ability to apprehend the feelings and intentions of others. (7) Intrapersonal Intelligence is the ability to understand one's own feelings and motivations. Meanwhile, (8) Naturalistic has to do with nature, nurturing and relating information to one's natural surroundings. Those with it are said to have greater sensitivity to nature and their place within it.

Several studies were conducted based on the multiple intelligences. In the study of Fisher (2000), participants in the multiple intelligence program performed just as well as those who have been in the traditional program.

The studies of Laruan (2006) and Judith (2013) revealed that multiple intelligences of the respondents vary when grouped according to sex, course, and family income.

Foreign studies revealed that verbal, logical, and intrapersonal intelligence were significant predictors for self and parents overall IQ estimations. Males were more likely to believe in sex differences in intelligences than females. (Neto, F., Ruiz, F., and Furnham, A., 2008) In addition, Kunkel (2007) in his study included significant time in the musical, spatial and bodily-kinesthetic intelligences, as well as the traditional areas of logical-mathematical and linguistics. Saban and Ahmet (2007) proved that there has been a significant increase in the number of multiple intelligence (MI) studies in Turkey.

Therefore, the challenge for the Guimaras State College as teaching-learning institution is to determine the multiple intelligences among their college students. In that way, the faculty and those in the administration will be given direction on the formulation of teaching-learning strategies that can help build students' academic performance.

### **Statement of the problem**

This study was conducted to determine the multiple intelligences of the Industrial Technology students at Guimaras State College-Mosqueda Campus for the first semester of the academic year 2013-2014.

Specifically, it sought to answer the following questions:

1. What is the profile of Industrial Technology students as to age, sex, year level, parents' educational attainment and monthly income?
2. What is the academic performance of Industrial Technology students?
3. What are the multiple intelligences among Industrial Technology Students?
4. Are there significant differences in the academic performance among Industrial Technology students when they are classified according to age, sex, year level, educational attainment of parents and monthly income?
5. Are there significant relationships between multiple intelligences and academic performance?

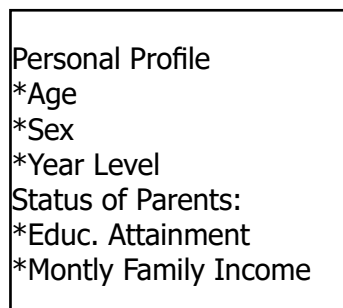
### **Null hypotheses**

Based on the preceding questions, the following hypotheses were drawn in the study:

1. There is no significant difference in the academic performance among Industrial Technology students when they are classified according to age, sex, year level, educational attainment of parents and monthly income?
2. There is no significant relationship between multiple intelligences and academic performance.

## Research paradigm

### Independent Variables



### Dependent Variables

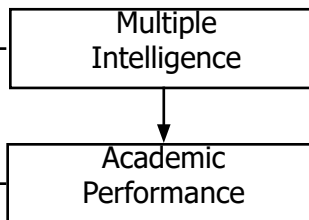


Figure 1: A schematic diagram showing the difference in multiple intelligences among Industrial Technology students of Guimaras State College-Mosqueda Campus.

## METHODOLOGY

This research employed both qualitative and quantitative methods of research in order to determine the Multiple Intelligences among Industrial Technology students of Guimaras State College-Mosqueda Campus. One shot survey method was used since the data was gathered from the respondents once. Total enumeration was used in this study. The respondents of the study were the Industrial Technology students from the first year to fourth year enrolled at Guimaras State College during the first semester of Academic Year 2013-2014.

The researchers prepared a questionnaire for students who were the respondents. The questionnaire was composed of four parts which included the personal profile of the respondents; socio-economic status of the family; academic performance; and the multiple intelligences assessment.

The draft of the questionnaire was presented to the panel of experts for comments and suggestions. The same instrument was presented to the panel of examiners during the proposal defense which was approved later with suggestions to refine further its organization and content. The statistical tools which were used in analyzing and evaluating the data gathered from the questionnaire using SPSS program for Windows: frequency count, percentage, mean, t-test, and Analysis of Variance (ANOVA).

## RESULTS AND DISCUSSIONS

### Profile of the respondents

Results showed that out of 230 respondents, there were 218 or 94.8% having ages between 16-25 and 5 or 2.2% belonging to age bracket 26 and above. When grouped according to sex, 140 or 60.9% were male while 90 or 39.1% were female.

In view of the year levels of the Industrial Technology students, results showed that 132 or 57.4% were first year, 79 or 34.3% were second year, 5 or 2.2% were third year, and 11 or 4.8% were fourth year students while 3 or 1.3% of students did not indicate their year levels.

Table 2. Profile of the respondents

| Categories            | f   | %     |
|-----------------------|-----|-------|
| <b>Age</b>            |     |       |
| 16-25 year old        | 218 | 94.8  |
| 26 year old and above | 5   | 2.2   |
| Did not indicate      | 7   | 3     |
| <b>Total</b>          | 230 | 100.0 |
| <b>Sex</b>            |     |       |
| Male                  | 140 | 60.9  |
| Female                | 90  | 39.1  |
| <b>Total</b>          | 230 | 100.0 |
| <b>Year Level</b>     |     |       |
| First Year            | 132 | 57.4  |
| Second Year           | 79  | 34.3  |
| Third Year            | 5   | 2.2   |
| Fourth Year           | 11  | 4.8   |
| Did not indicate      | 3   | 1.3   |
| <b>Total</b>          | 230 | 100.0 |

### Parents' educational attainment and family income

When grouped according to the educational attainment of the respondents' mothers, there were 40 or 17.4% elementary level, 18 or 7.8% elementary graduates, 103 or 44.8% high school level, 34 or 14.8% high school graduates, 26 or 11.3% college level, and 6 or 2.6% college graduates, while the remaining 3 or 1.3% did not indicate their educational attainment. In terms of the educational attainment of the respondents' fathers, there were 43 or 18.7% elementary level, 21 or 9.1% elementary graduates, 95 or 41.3% high school level, 30 or 13% high school graduates, 27 or 11.7% college level, and 7 or 3.0% college graduates, 1 or .4% had a vocational education while the remaining 6 or 2.6% did not indicate their educational attainment.

Table 3. Parents' educational attainment

| Categories                              | f   | %     |
|-----------------------------------------|-----|-------|
| <b>Educational attainment of mother</b> |     |       |
| Elementary Level                        | 40  | 17.4  |
| Elementary Graduate                     | 18  | 7.8   |
| High School Level                       | 103 | 44.8  |
| High School Graduate                    | 34  | 14.8  |
| College Level                           | 26  | 11.3  |
| College Graduate                        | 6   | 2.6   |
| Did not indicate                        | 3   | 1.3   |
| <b>Total</b>                            | 230 | 100.0 |
| <b>Educational attainment of father</b> |     |       |
| Elementary Level                        | 43  | 18.7  |
| Elementary Graduate                     | 21  | 9.1   |
| High School Level                       | 95  | 41.3  |
| High School Graduate                    | 30  | 13    |
| College Level                           | 27  | 11.7  |
| College Graduate                        | 7   | 3     |
| Vocational                              | 1   | 0.4   |
| Did not indicate                        | 6   | 2.6   |
| <b>Total</b>                            | 230 | 100.0 |

With the monthly family income, 93 or 40.4% indicated to receive a wage of 1,300 or below, 65 or 28.3% whose income were below minimum wage (1,301-6,900), there were 17 or 7.4% who receives a monthly minimum wage or (6,901-7000), 18 or 7.8% indicated to have received 7,001-10,000, 21 or 9.1% belong to those whose income is between 10,001-15,000, 4 or 1.7% have an income of 15,001-20,000, 5 or 2.2% has an income of 20,001-30,000, 1 or .4% has 30,001-40,000, 2 or .9% of which receive 40,001-50,000 while 4 or 1.7 did not indicate their family income per month.

Table 4. Monthly family income

| Family Income                    | f   | %     |
|----------------------------------|-----|-------|
| 1,300 and below                  | 93  | 40.4  |
| Below minimum wage (1,301-6,900) | 65  | 28.3  |
| Minimum wage (6,901- 7000)       | 17  | 7.4   |
| 7001-10,000                      | 18  | 7.8   |
| 10,001-15,000                    | 21  | 9.1   |
| 15,001-20,000                    | 4   | 1.7   |
| 20,001-30,000                    | 5   | 2.2   |
| 30,001-4,000                     | 1   | 0.4   |
| 4,0001-5,000                     | 2   | 0.9   |
| Did not Indicate                 | 4   | 1.7   |
| Total                            | 230 | 100.0 |

### Academic performance

In terms of the academic performance of the respondents, results showed that there were 26 or 11.2% students who had a passing grade point average of 3.0-2.6, 91 or 39.6% got a fair grade point average which range from 2.5-2.1, 112 or 48.7% respondents performed good obtaining a grade point average of 2.0-1.6, and only 1 or .4% got a very good grade or 1.5-1.1. The total mean of the grade point average of the respondents was 2.15 categorized as fair.

Table 5. Academic performance

| Average Performance                 | f   | %     |
|-------------------------------------|-----|-------|
| Passing (3.0 to 2.6)                | 26  | 11.3  |
| Fair (2.5 to 2.1)                   | 91  | 39.6  |
| Good (2.0 to 1.6)                   | 112 | 48.7  |
| Very Good (1.5 to 1.1)              | 1   | 0.4   |
| Total                               | 230 | 100.0 |
| Total Mean = 2.15 (Fair), SD = .301 |     |       |

### Multiple intelligences among industrial technology students

Results indicated that among the respondents, the top three ranks of their intelligences were: (1) intrapersonal with a mean of 3.15 (Good), (2) interpersonal with a mean of 3.1 (Good), and (3) bodily-kines-thetic with a mean of 3.11 (Good). These results relate the fact that the Industrial Technology students are highly self-motivated and people-oriented Individuals. Furthermore, students tend to learn best with hands on exercises because of their bodily-kinesthetic intelligence. Meanwhile, their three least intelligences were: (6) visual-spatial having a mean of 2.99 (Good), (7) logical-mathematical having a mean of 2.93 (Good), and lastly, (8) verbal-linguistic having a mean of 2.89 (Good). The results imply that the Industrial Technology students have less interest with activities relating to these intelligences, such as drawing, designing, solving math problems, writing, etc. Data are presented in table 6.

Table 6. Summary of multiple intelligences' mean

| Multiple Intelligences  | Mean | Interpretation | Rank |
|-------------------------|------|----------------|------|
| 1. Verbal-Linguistic    | 2.89 | Good           | 8    |
| 2. Logical-Mathematical | 2.93 | Good           | 7    |
| 3. Visual-Spatial       | 2.99 | Good           | 6    |
| 4. Musical              | 3.08 | Good           | 5    |
| 5. Bodily-Kinesthetic   | 3.11 | Good           | 3    |
| 6. Interpersonal        | 3.14 | Good           | 2    |
| 7. Intrapersonal        | 3.15 | Good           | 1    |
| 8. Naturalistic         | 3.09 | Good           | 4    |

Scale: 1-1.79 (Poor); 1.80-2.59 (Fairly Good); 2.60-3.39 (Good); 3.40-4.19 (Very Good), 4.20 (Excellent)

### Verbal linguistic Intelligence

Table 7 presents the summary of assessment for verbal linguistic. Results show that respondents can easily absorb information from the radio or audio cassettes supported with a mean of 3.39(Good). This implies that these students learn well by hearing or with the aid of audio materials. Meanwhile, language games and such are less likely to be enjoyed by the respondents which resulted in having a mean of 2.43(Fairly Good).

Table 7. Summary of assessment for verbal-linguistic intelligence

| Category                                                                                            | Mean | SD    | Interpretation |
|-----------------------------------------------------------------------------------------------------|------|-------|----------------|
| Verbal-Linguistic                                                                                   |      |       |                |
| 1. I enjoy word play. Making puns, tongue-twisters, limericks.                                      | 2.43 | 1.045 | Fairly Good    |
| 2. I can easily express myself either orally or in writing, i.e. I'm a good story-teller or writer. | 2.45 | 0.997 | Fairly Good    |
| 3. I can easily express myself either orally or in writing, i.e. I'm a good story-teller or writer. | 2.94 | 1.051 | Good           |
| 4. I pepper my conversation with frequent allusions to things I'm read or heard.                    | 2.80 | 1.021 | Good           |
| 5. I like to do crosswords, play Scrabble or have a go at other word puzzles.                       | 2.90 | 1.139 | Good           |
| 6. People sometimes have to ask me to explain a word I've used.                                     | 3.06 | 1.134 | Good           |
| 7. In school, I preferred subjects such as English, history and social studies.                     | 2.78 | 1.064 | Good           |
| 8. I can hold my own in verbal arguments or debates.                                                | 2.74 | 1.073 | Good           |
| 9. I like to talk through problems, explain solutions, ask questions.                               | 3.28 | 1.202 | Good           |
| 10. I can readily absorb information from the radio or audio cassettes.                             | 3.39 | 1.058 | Good           |
| Total                                                                                               | 2.89 | .693  | Good           |

Scale: 1-1.79 (Poor); 1.80-2.59 (Fairly Good); 2.60-3.39 (Good); 3.40-4.19 (Very Good), 4.20 (Excellent)

### Logical-Mathematical intelligence

From the results of the summary of assessment for logical-mathematical, it is implied that Industrial Technology students can easily manage their allowances as shown by the mean of 3.45 (Very Good). However, the mean of 2.68 (Good) indicated that mathematics and science are not among the respondents' favorite subjects.

Table 8. Summary of assessment for logical-mathematical intelligence

| Category                                                                                                 | Mean | SD    | Interpretation |
|----------------------------------------------------------------------------------------------------------|------|-------|----------------|
| <b>Logical-Mathematical</b>                                                                              |      |       |                |
| 11. I enjoy working with numbers and can do mental calculations.                                         | 2.77 | 1.096 | Good           |
| 12. I'm interested in new scientific advances.                                                           | 3.02 | 1.106 | Good           |
| 13. I can easily balance my school allowance; do the school budget.                                      | 3.45 | 1.286 | Very Good      |
| 14. I like to put a detailed itinerary together for vacations or business trips.                         | 2.78 | 1.096 | Good           |
| 15. I enjoy the challenge of brain teasers or other puzzles that require logical thinking.               | 2.73 | 1.103 | Good           |
| 16. I tend to find the logical flaws in things people say and do.                                        | 2.84 | 0.999 | Good           |
| 17. Mathematics and science were among my favorite subjects in school.                                   | 2.68 | 1.057 | Good           |
| 18. I can find specific examples to support a general point of view.                                     | 2.88 | 0.997 | Good           |
| 19. I take a systematic, step-by-step approach to problem-solving.                                       | 3.11 | 1.072 | Good           |
| 20. I need to categorize, group or quantify things to appreciate their relevance.                        | 3.00 | 1.051 | Good           |
| Total                                                                                                    | 2.93 | .721  | Good           |
| Scale: 1-1.79 (Poor); 1.80-2.59 (Fairly Good); 2.60-3.39 (Good); 3.40-4.19 (Very Good), 4.20 (Excellent) |      |       |                |

### Visual-spatial intelligence

Results from the items given for visual-spatial intelligence showed that with a mean of 3.20 interpreted as Good, students have a sense of appreciation for the arts. However, the respondents found it difficult to read map or navigate due to their less exposure to the subject, (M=2.70, D=.931).

Table 9. Summary of assessment for visual-spatial intelligence

| Category                                                                                                 | Mean | SD    | Interpretation |
|----------------------------------------------------------------------------------------------------------|------|-------|----------------|
| <b>Visual-Spatial</b>                                                                                    |      |       |                |
| 21. I have an appreciation of the arts.                                                                  | 3.20 | 1.221 | Good           |
| 22. I tend to make a visual record of events with a digital camera or cell phone camera.                 | 2.99 | 1.202 | Good           |
| 23. I find myself doodling when taking notes or thinking through something.                              | 2.91 | 1.104 | Good           |
| 24. I have no problem reading maps and navigating.                                                       | 2.7  | 0.931 | Good           |
| 25. I enjoy visual games such as jigsaw puzzles and mazes.                                               | 2.99 | 1.158 | Good           |
| 26. I'm quite adept at taking things apart and putting them back together.                               | 2.91 | 1.058 | Good           |
| 27. In school, I liked lessons in art and preferred geometry to algebra.                                 | 3.19 | 1.143 | Good           |
| 28. I often make my point by providing a diagram or drawing.                                             | 2.98 | 1.102 | Good           |
| 29. I can visualize how things look from a different perspective.                                        | 2.97 | 1.094 | Good           |
| 30. I prefer reading material that is heavily illustrated.                                               | 3.03 | 1.090 | Good           |
| Total                                                                                                    | 2.99 | 0.735 | Good           |
| Scale: 1-1.79 (Poor); 1.80-2.59 (Fairly Good); 2.60-3.39 (Good); 3.40-4.19 (Very Good), 4.20 (Excellent) |      |       |                |

## Musical intelligence

Results showed that among the criteria for musical intelligence, the respondents often listen to music at home even in jeepney with a mean of 3.63 (Very Good). This implies that music plays a big role in the daily routine of the musically intelligent people. Meanwhile, only a mean of 2.53 (Fairly Good) was indicated in the respondent's ability to play a musical instrument.

Table 10. Summary of assessment for musical intelligence

| Category                                                                                                 | Mean        | SD          | Interpretation |
|----------------------------------------------------------------------------------------------------------|-------------|-------------|----------------|
| <b>Musical</b>                                                                                           |             |             |                |
| 31. I can play a musical instrument.                                                                     | 2.53        | 1.188       | Fairly Good    |
| 32. I can manage to sing on key.                                                                         | 2.67        | 1.209       | Good           |
| 33. Usually, I can remember a tune after hearing it just a couple of times.                              | 3.06        | 1.162       | Good           |
| 34. I often listen to music at home and even in jeepney.                                                 | 3.63        | 1.239       | Very Good      |
| 35. I find myself tapping in time to music.                                                              | 3.26        | 1.207       | Good           |
| 36. I can identify different musical instruments.                                                        | 2.98        | 1.104       | Good           |
| 37. Theme music or commercial jingles often pop into my head.                                            | 2.9         | 1.136       | Good           |
| 38. I can't imagine life without music.                                                                  | 3.37        | 1.246       | Good           |
| 39. I often whistle or hum a tune.                                                                       | 2.9         | 1.253       | Good           |
| 40. I like a musical background when I'm working.                                                        | 3.56        | 1.319       | Very Good      |
| <b>Total</b>                                                                                             | <b>3.08</b> | <b>.801</b> | <b>Good</b>    |
| Scale: 1-1.79 (Poor); 1.80-2.59 (Fairly Good); 2.60-3.39 (Good); 3.40-4.19 (Very Good), 4.20 (Excellent) |             |             |                |

## Bodily-kinesthetic intelligence

Results showed that among the categories of bodily-kinesthetic, respondents scored highest (M=3.35, Good) on taking part in a sport or regularly performing some kind of exercise. This shows that Industrial Technology students process knowledge through bodily sensations but their passion to perform is not connected with their boldness to be on the dance floor; hence, a mean of 2.73 (Good) was reflected.

Table 11. Summary of assessment for bodily-kinesthetic intelligence

| Category                                                                                                    | Mean        | SD          | Interpretation |
|-------------------------------------------------------------------------------------------------------------|-------------|-------------|----------------|
| <b>Bodily-Kinesthetic</b>                                                                                   |             |             |                |
| 41. I take part in a sport or regularly perform some kind of physical exercise.                             | 3.35        | 1.106       | Good           |
| 42. I'm quite adept at 'do-it-yourself.'                                                                    | 3.12        | 1.069       | Good           |
| 43. I like to think through problems while engaged in a physical pursuit such as walking or running.        | 3.01        | 1.070       | Good           |
| 44. I don't mind getting up on the dance floor.                                                             | 2.73        | 1.165       | Good           |
| 45. I like the most thrilling rides at the fun fair.                                                        | 3.06        | 1.213       | Good           |
| 46. I need to handle something to fully understand it.                                                      | 3.25        | 1.071       | Good           |
| 47. The most enjoyable classes in school were PE and any handicraft lessons.                                | 3.40        | 1.101       | Very Good      |
| 48. I use hand gestures or other kinds of body language to express myself.                                  | 2.90        | 1.113       | Good           |
| 49. I like rough and tumble play with children.                                                             | 3.07        | 1.141       | Good           |
| 50. I need to tackle a new learning experience 'hands on' rather than reading a manual or watching a video. | 3.26        | 1.117       | Good           |
| <b>Total</b>                                                                                                | <b>3.11</b> | <b>.729</b> | <b>Good</b>    |
| Scale: 1-1.79 (Poor); 1.80-2.59 (Fairly Good); 2.60-3.39 (Good); 3.40-4.19 (Very Good), 4.20 (Excellent)    |             |             |                |



## Interpersonal intelligence

In terms of the respondents' rate in interpersonal, they claimed that they enjoy working with other people as part of a group or committee ( $M=3.45$ ,  $SD=1.209$ ). This implies that students learn more when group activities are included in their classes which further enhance their skills and social aspect. Meanwhile, playing board games which involves other people is their less favorite choice having a mean of 2.74 (Good).

Table 12. Summary of assessment for interpersonal intelligence

| Category                                                                                                                   | Mean        | SD          | Interpretation |
|----------------------------------------------------------------------------------------------------------------------------|-------------|-------------|----------------|
| <b>Interpersonal</b>                                                                                                       |             |             |                |
| 51. I enjoy working with other people as part of a group or committee.                                                     | 3.45        | 1.209       | Very Good      |
| 52. I take great pride in being a mentor to someone else.                                                                  | 3.08        | 1.091       | Good           |
| 53. People tend to come to me for advice.                                                                                  | 3.36        | 1.173       | Good           |
| 54. I prefer team sports—such as basketball, softball, soccer, football—to individual sports such as swimming and running. | 3.06        | 1.404       | Good           |
| 55. I like games involving other people—bridge, Monopoly, Trivial Pursuit.                                                 | 2.74        | 1.129       | Good           |
| 56. I'm a social butterfly. I would prefer to be at a party rather than home alone watching television.                    | 2.8         | 1.197       | Good           |
| 57. I have several very close personal friends.                                                                            | 3.57        | 1.233       | Very Good      |
| 58. I communicate well with people and can help resolve disputes.                                                          | 3.23        | 1.050       | Good           |
| 59. I have no hesitation in taking the lead; showing other people how to get things done.                                  | 3.03        | 1.121       | Good           |
| 60. I talk over problems with others rather than trying to resolve them by myself.                                         | 3.11        | 1.130       | Good           |
| <b>Total</b>                                                                                                               | <b>3.14</b> | <b>.726</b> | <b>Good</b>    |

Scale: 1-1.79 (Poor); 1.80-2.59 (Fairly Good); 2.60-3.39 (Good); 3.40-4.19 (Very Good), 4.20 (Excellent)

## intrapersonal intelligence

The intrapersonal intelligence tops among other intelligences. The results show that Industrial Technology students are goal-setters (3.49, Very Good). This intelligence directs them to know themselves fully and to pursue their dreams and aspirations in life. Though, going fishing alone is not enjoyable for them, a mean of 2.75 (Good) indicates this inference.

Table 13. Summary of assessment for intrapersonal intelligence

| Category                                                                                                           | Mean | SD    | Interpretation |
|--------------------------------------------------------------------------------------------------------------------|------|-------|----------------|
| Intrapersonal                                                                                                      |      |       |                |
| 61. I keep a personal diary or log to record my innermost thoughts.                                                | 2.79 | 1.313 | Good           |
| 62. I often spend 'quiet time' reflecting on the important issues in my life.                                      | 3.29 | 1.195 | Good           |
| 63. I have set my own goals—I know where I'm going.                                                                | 3.49 | 1.101 | Very Good      |
| 64. I am an independent thinker—I know my own mind, make up my own mind.                                           | 3.39 | 1.161 | Good           |
| 65. I have a private hobby or interest which I don't really share with anyone else.                                | 3.12 | 1.234 | Good           |
| 66. I like to go fishing by myself or take a solitary hike. I am happy with my own company.                        | 2.75 | 1.239 | Good           |
| 67. My idea of a good vacation is an isolated hilltop cabin rather than a five-star resort and lots of people.     | 2.9  | 1.263 | Good           |
| 68. I have a realistic idea of my own strengths and weaknesses.                                                    | 3.34 | 1.344 | Good           |
| 69. I have attended Self-improvement Workshops or been through some kind of counseling to learn more about myself. | 3.15 | 1.193 | Good           |
| 70. I work for myself—or have seriously contemplated 'doing my own thing.'                                         | 3.33 | 1.104 | Good           |
| Total                                                                                                              | 3.15 | .744  | Good           |

Scale: 1-1.79 (Poor); 1.80-2.59 (Fairly Good); 2.60-3.39 (Good); 3.40-4.19 (Very Good), 4.20 (Excellent)

### Naturalistic Intelligence

Results for naturalistic intelligence showed that the respondents are pet lovers with a mean of 3.29 (Good) though only a mean of 2.81 (Good) was indicated in the category which deals with envisioning oneself as a farmer or a fisherman. From these results, it can be implied that the Industrial Technology students plan to land on a job which relates to their chosen fields and expertise.

Table 14. Summary of assessment for naturalistic intelligence

| Category                                                                                                                                                 | Mean | SD    | Interpretation |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------|----------------|
| Naturalistic                                                                                                                                             |      |       |                |
| 71. I keep or like pets.                                                                                                                                 | 3.29 | 1.221 | Good           |
| 72. I can recognize and name many different types of trees, flowers and plants.                                                                          | 3.15 | 1.148 | Good           |
| 73. I have an interest in and good knowledge of how the body works—where the main internal organs are, for example, and I keep abreast on health issues. | 3.06 | 1.126 | Good           |
| 74. I am conscious of tracks; nests and wildlife while on a walk and can 'read' weather signs.                                                           | 3.11 | 1.076 | Good           |
| 75. I envision myself as a farmer or maybe I like to fish.                                                                                               | 2.81 | 1.154 | Good           |
| 76. I am a keen gardener.                                                                                                                                | 2.87 | 1.165 | Good           |
| 77. I have an understanding of, and interest in, the main global environmental issues.                                                                   | 3.24 | 1.098 | Good           |
| 78. I am reasonably informed about developments in astronomy, the origins of the universe and the evolution of life.                                     | 2.97 | 1.081 | Good           |
| 79. I am interested in social issues, psychology and human motivations.                                                                                  | 3.13 | 1.152 | Good           |
| 80. I consider that conservation of resources and achieving sustainable growth is two of the biggest issues of our times.                                | 3.21 | 1.163 | Good           |
| Total                                                                                                                                                    | 3.09 | .801  | Good           |

Scale: 1-1.79 (Poor); 1.80-2.59 (Fairly Good); 2.60-3.39 (Good); 3.40-4.19 (Very Good), 4.20 (Excellent)

## Difference in the academic performance of the respondents when grouped according to profile

Table 15 presents the T-test results for the difference in the academic performance when grouped according to sex and age.. Results showed that there is a significant difference in the academic performance of the Industrial Technology students when grouped according to variable sex. Male students performed better ( $M=2.2000$ ) than the females ( $M=2.1178$ ). On the other hand, results signified that age is not a significant factor for the respondents to perform well in the academe.

Table 15. Difference in the academic performance sex and age

|                         | t      | df  | Sig.(2-tailed) |
|-------------------------|--------|-----|----------------|
| Sex                     |        |     |                |
| Equal variances assumed | 2.033* | 228 | .043           |
| Age                     |        |     |                |
| Equal variances assumed | 1.861  | 221 | .064           |

The results presented in table 16 indicate that there is a significant difference in the multiple intelligences of the respondents when grouped according to year level. With  $F=19.123$ ,  $p=000$ , it implies that as the year level progresses, the knowledge acquired also increases.

Table 16. Difference in the academic performance and year level

| Year level     | Sum of squares | df  | Mean square | F      | Sig. |
|----------------|----------------|-----|-------------|--------|------|
| Between groups | 1.104          | 5   | .221        | 2.492* | .032 |
| Within groups  | 19.587         | 221 | .089        |        |      |
| Total          | 20.692         | 226 |             |        |      |

Table 17 presents the T-test results for the difference in the academic performance when grouped according to Educational Attainment of the mother. Results revealed that there was a distinct variation between levels of educational attainments of the mothers, which resulted to a significant difference in the academic performance of the respondent and the educational attainment of the mother  $F(5,221) = 2.492$ ,  $p=.032$ .

Table 17. Difference in the academic performance and educational attainment of mother

| Educational attainment of Mother | Sum of Squares | df  | Mean Square | F      | Sig. |
|----------------------------------|----------------|-----|-------------|--------|------|
| Between Groups                   | 1.104          | 5   | .221        | 2.492* | .032 |
| Within Groups                    | 19.587         | 221 | .089        |        |      |
| Total                            | 20.692         | 226 |             |        |      |

Table 18 illustrates the ANOVA for educational attainment of the father and the academic performance of the respondents. Result showed that there was no significant difference between the educational attainment of the father and the academic performance of the respondent.

Table 18. Difference between academic performance of the respondents when grouped according to educational attainment of the father.

| Educational attainment of father | Sum of squares | df  | Mean square | F     | Sig. |
|----------------------------------|----------------|-----|-------------|-------|------|
| Between groups                   | 1.095          | 6   | .182        | 2.043 | .061 |
| Within groups                    | 19.381         | 217 | .089        |       |      |
| Total                            | 20.476         | 223 |             |       |      |

Results for the relationship between academic performance and family income showed no significant difference. This implies that the income of the family cannot be considered as a factor for a student to perform well in class.

Table 19. Difference in the academic performance and family income

| Income         | Sum of Squares | df  | Mean Square | F    | Sig. |
|----------------|----------------|-----|-------------|------|------|
| Between Groups | 0.51           | 8   | 0.064       | .691 | .700 |
| Within Groups  | 20.037         | 217 | 0.092       |      |      |
| Total          | 20.547         | 225 |             |      |      |

### Relationship in the respondent's academic performance and their multiple intelligences

Results showed that among the multiple intelligences, only the verbal-linguistic intelligence as shown by  $r=.0001$  has a significant relationship in the academic performance. From this result, it implies that if the students are not motivated to develop their language skill, there is a tendency that their academic performance will be affected.

Table 20. Relationship between multiple intelligence and academic performance

|                      |                     | Sum of Squares |
|----------------------|---------------------|----------------|
| Verbal-Linguistic    | Pearson Correlation | -.226          |
|                      | Sig. (2-tailed)     | .001*          |
|                      | N                   | 227            |
| Logical-Mathematical | Pearson Correlation | -.033          |
|                      | Sig. (2-tailed)     | .616           |
|                      | N                   | 230            |
| Visual-Spatial       | Pearson Correlation | -.006          |
|                      | Sig. (2-tailed)     | .924           |
|                      | N                   | 230            |
| Musical              | Pearson Correlation | .003           |
|                      | Sig. (2-tailed)     | .960           |
|                      | N                   | 229            |
| Bodily-Kinesthetic   | Pearson Correlation | .001           |
|                      | Sig. (2-tailed)     | .986           |
|                      | N                   | 230            |
| Interpersonal        | Pearson Correlation | .006           |
|                      | Sig. (2-tailed)     | .932           |
|                      | N                   | 230            |
| Intrapersonal        | Pearson Correlation | -.052          |
|                      | Sig. (2-tailed)     | .434           |
|                      | N                   | 229            |
| Naturalistic         | Pearson Correlation | -.124          |
|                      | Sig. (2-tailed)     | .062           |
|                      | N                   | 229            |

\* <0.05 significance

## CONCLUSIONS

Based from the findings of the study, the following conclusions were made:

1. Majority of the respondents aged from 16-25, most of them were male. The first year has the biggest population. Most of the respondents' parents were not able to finish high school. Majority of the family income is 1,300 or below.
2. Most of the respondents performed good in their classes.
3. Respondents demonstrated a strong preference for Intrapersonal, interpersonal, and (3) bodily-kinesthetic. Though, visual-spatial, logical-mathematical, and verbal-linguistic scored less.
4. There are three significant variables which affect the academic performance of the respondents. They are sex, year level, and educational attainment of the mother. Therefore, the null hypothesis which states "There is no significant difference in the academic performance among respondents when grouped according to sex, year level and educational attainment of parents" is rejected.
5. Among the multiple intelligences only the verbal-linguistic intelligence has a significant relationship in the academic performance. Hence, the null hypothesis which states, "There is no significant relationship in the multiple intelligences and academic performance" is rejected.

## **\*\*RECOMMENDATIONS\*\***

1. The school of Industrial Technology should encourage their students to continue or finish their bachelor's degree because only a few are able to graduate with a diploma in the said program. The government and the administration should provide scholarship programs and service grants to cater those who are poor but deserving and dedicated students.
2. The Guimaras State College in her pursuit for quality education should first determine their applicants' intelligence and offer them the program and course which best suit with their skills and potentials.
3. The teaching personnel should recognize and teach to a broader range of talents and skills. In addition, they should structure the presentation of material in a style which engages most or all of the intelligences. Lastly, teachers must seek to assess their students' learning in ways which will give an accurate overview of their students' strengths and weaknesses.

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