ACADEMIC PERFORMANCE AND MULTIPLE INTELLIGENCES OF FIRST YEAR HIGH SCHOOL STUDENTS IN CHIANG KAI SHEK COLLEGE: BASES FOR THE DEVELOPMENT OF DIFFERENTIATED ACTIVITIES

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Each person is unique. Each one is far more complex, mysterious, and profound that no standard testing instrument can reveal. An interesting fact is that not everybody is strong in the same areas. Just as we look physically different, we also learn differently. Howard Gardner of Harvard has identified eight distinct intelligences. This theory has emerged from recent cognitive research and documents the extent to which students possess different kinds of minds and therefore learn, remember, perform, and understand in different ways. The role of Multiple Intelligence Theory is to introduce activities in a wide range of area where it could make possible to challenge and examine each intelligences in an appropriate manner.

According to Gardner (1991), we are all able to know the world through language, logical-mathematical analysis, spatial representation, musical thinking, and the use of the body to solve problems or to make things, an understanding of other individuals, and an understanding of ourselves. Where individuals differ is in the strength of these intelligences - the so-called profile of intelligences -and in the ways in which such intelligences are invoked and combined to carry out different tasks, solve diverse problems, and progress in various domains."

Many educational institutions abroad are using Multiple Intelligences Theory in their schools as part of their assessment of the abilities of their students or to guide teachers on what approach would be best suited in teaching their curriculum. Gardner says that these differences "challenge an educational system that assumes that everyone can learn the same materials in the same way and that a uniform, universal measure suffices to test student learning. Indeed, as currently constituted, our educational system is heavily biased toward linguistic and logical modes of instruction and assessment.

The researcher remembered the IQ test she used to have. All the while, she believes taking an IQ test is the only way to measure the cognitive ability of a person. A question that being place in a box where there were several uncertainties is not resolve. Just like the question of who is more intelligent? Michael Jordan or Albert Einstein, Bill Gates or Muhammad Ali? These are individuals who are gifted in many different ways; it becomes impossible to direct this to single term of ‘intelligence”.

At this point, intrigued with the Multiple Intelligence [MI] Theory, the researcher was motivated to a heightened concern with human intelligence. This concern grows out in believing that intelligence is not fixed and static. At birth, everyone

learns in different ways at different rates for different reasons. Students learn in ways that are identifiably distinctive. The broad spectrum of students - and perhaps the society as a whole - would be better served if disciplines could be presented in a numbers of ways and learning could be assessed through a variety of means. It is for this reason that this study was conducted.

Garner presented seven intelligences / abilities, these are:

Visual-Spatial Intelligence – the ability to perceive in terms of physical space, as do architects and sailors. It interprets and graphically represents visual or spatial ideas, to transform visuals into imaginative and expressive creations.

Bodily-Kinesthetic Intelligence –refers to learn by "doing"; it uses the body effectively, like a dancer or a surgeon. It involves all the keen senses of the body awareness. It prefers concrete, real-life experiences .They like movement, making things, and touching. They communicate well through body language and are taught through physical activity or hands-on learning. They possess the marvelous ability to transform the intentions of the mind into action.

Rhythmic-Musical Intelligence – the ability to understand and develop sensitivity to rhythm and sound, to respond emotionally to music, and to work together to use music to meet the needs of others; to interpret musical forms and ideas, and to create imaginative and expressive performances.

Interpersonal Intelligence – refers to the understanding, and interacting with others. This intelligence allows us to form relationships and helps us get along with others.

Intrapersonal Intelligence – is understanding one's own interests and goals. These learners tend to shy away from others. They're in tune with their inner feelings; they have wisdom, intuition and motivation, as well as a strong will, confidence, and opinions.

Verbal-Linguistic Intelligence – it refers to the ability of using words effectively to form grammatical sentences. The ability to think in words is what allows human beings to remember and analyze, this linguistic intelligences sets us apart from other animals.

Logical –Mathematical Intelligence – the ability to use numbers to compute and describe, to use mathematical concepts to make conjectures; to think conceptually, abstractly and are able to see and explore patterns and relationships.

Naturalist Intelligence – the ability to recognize and classify plants, minerals, and animals. It also includes rocks and grass and all varieties of flora and fauna.

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The Theory of Multiple Intelligences was developed as an account of human cognition that can be subjected to empirical tests. The theory harbored a number of educational implications that are worthy of consideration. Turning then to aspects of education, the researcher will comment on the role of nurturing. From this analysis, a valuable assessment of intelligences can play a crucial role in curriculum development. Gardner's MI Theory has direct implications for education. Traditional classrooms often are taught in the format of lecture, worksheets, and written tests. Each student's learning styles are viewed as being identical to those of other students.

Gardner [1999] argues that by teaching in such a uniform manner, we are only reaching a small proportion of the children, those with strengths in the linguistic and logical-mathematical intelligences. In order for education to meet the needs of all the children, however the system must be adapted to address the variety of intelligences that exist in our society [Fasko, 2001]. People have a unique blend of intelligences; individuals differ from one another. They learn in different kinds of ways. A big challenge facing the deployment of human resources is how to best take advantage of the uniqueness conferred on us as a species exhibiting several intelligences.

This theory also believes that each human being possesses several intelligences and the fact that represent things mentally in numerous symbolic systems to one another means that they are not going to construe the same way or see the same options.

Both Bloom's Taxonomy and MI Theory provide structures that ensure students' experiences meet their needs and abilities. The implementation of Bloom's Taxonomy of Thinking enables teachers to plan for and implement a program that allows for cognitive differentiation of tasks so that students are performing at their own level and thinking about texts in different ways. With this, teachers can individualize their teaching strategy and target particular intelligences and levels of thinking [i.e., knowledge, comprehension, evaluation, analysis and synthesis] for particular students or groups of students based on their strengths, weaknesses, and interests.

METHODOLOGY:

To answer the specific problems, the researcher distributed checklist to 135 First Year Students, who all received failing marks in core subjects of Mathematics, English, and Science. In addition, the researcher evaluated the respondents' academic performance for the second quarter by using Form 137, which was secured from the Registrar's Office. Subsequently, the researcher evaluated and recorded the results. The upturn of the findings was 100 percent.

To identify the respondents' profile as to age and gender; educational attainments of respondents' parents; level of academic performance of the respondents in core subjects in Mathematics, English, and Science; levels of multiple intelligences of the respondents, and the of distribution of the respondents as to type of multiple intelligences, the researcher computed for the frequency distribution for a particular factor. Arithmetic mean was used in the analysis and interpretation of data for the respondents' age and academic performance.

Pearson's Correlation Coefficient was used in determining the relationship between academic performance and score in MI.

SUMMARY:

This study is about the Academic Performance and Multiple Intelligences of First Year High School Students in Chiang Kai Shek College: Bases for the development of differentiated activities for the School Year 2005-2006. Specifically, it sought answers to the following specific problems.

1. What is the profile of the respondents as to:
   1.1 Age and Gender
   1.2 Parents' Educational Attainment
2. What is the level of academic performance of the respondents in the following core subjects:
   2.1 English
   2.2 Math
   2.3 Science
3. What are the levels of Multiple Intelligences of the respondents?
   3.1 Visual-Spatial Intelligence
   3.2 Bodily-Kinesthetic Intelligence
   3.3 Interpersonal Intelligence
   3.4 Intrapersonal Intelligence
   3.5 Rhythmic-Musical Intelligence
   3.6 Verbal-Linguistic Intelligence
   3.7 Logical-Mathematical Intelligence

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3.8 Natural Intelligence
3.9 Types of the multiple intelligences of the respondents
3.10 Levels of the multiple intelligences of the respondents

4. What relationship exits between respondents' academic performance and their scores in multiple intelligences?
5. What differentiated activities maybe proposed to enhance the academic performance based on their multiple intelligences?

This study tested the null hypothesis that there is no significant relationship between respondents' academic performance and their scores in multiple intelligences.

SUMMARY OF FINDINGS:

1. Profile of Respondents
   1.1 Age and Gender

   From the total respondents of 135 students, 84 or 62.22 percent are male and 51 or 37.78 percent are female. Most of the respondents, 46 of them or 34.07 percent fall on the 12.6-13.5 years old.

   1.2 Parent's educational attainment

   There are 133 fathers or 49.63 percent and 135 are mothers or 50.37 percent of the total parent population. The majority of the fathers, 75 of them or 27.99 percent while 78 mothers or 29.10 percent of the total population. A total of 153 fathers and mothers comprising 57.09 percent are college graduates.

2. Level of Academic Performance of the Respondents in the Core Subjects:
   - English

     In English, there are 95 students. Of these, 82 or 86.32 percent had low ratings of 73 – 74. The mean for the academic performance in English is 71.74 or very low.

   - Mathematics

     In Mathematics, of the 56 students, 38 or 67.86 percent had low ratings of 73 – 74. The mean for the academic performance in Mathematics is 73.14 or low.

   - Science

     In Science, of the 50 respondents, 42 or 84 percent had low ratings of 73 – 74. The respondents' mean in

Science is 73.44 or low.

3. Levels of the Multiple Intelligences of the Respondents.

- Visual-Spatial Intelligence

  There are 35 students pertinent to Visual-Spatial Intelligence, 15 students or 42.87 percent with the range of 6 to 7 scores, denoting average level.

- Bodily-Kinesthetic Intelligence

  There are 8 respondents. Of these, 4 students or 50.00 percent had the range of 4 to 5 scores signifying low level.

- Interpersonal Intelligence

  There are 21 respondents. Of these, 8 students or 38.10 percent had the range of 6 to 7 scores, symbolizing average level.

- Intrapersonal Intelligence

  There are 22 respondents. Nine (9) students or 40.91 percent had the range of 8 to 9 scores, implying high level.

- Rhythmic-Musical Intelligence

  There are 24 students. Eleven (11) students or 45.83 percent had the extent of 8 to 9 scores, implying high level.

- Verbal-Linguistic Intelligence

  There are 8 respondents. Four (4) students or 50 percent had the array of 6 to 7 scores, symbolizing average level.

- Local-Mathematical Intelligence

  There are 5 respondents. Two (2) students or 40 percent had a range of both of 4 to 5 and 6 to 7 scores, signifying low level and average level category.

- Naturalist Intelligence

  There are 11 respondents. Four (4) students or 36.36 percent got the range of 8 to 9 scores, obtaining high level.

- Summary Distribution of Respondents According to types and levels of Multiple Intelligences

  There are 35 students or 25.93 percent of the total respondents who belong to the Visual-Spatial Intelligence; 24 or 17.79 percent to Rhythmic-Musical Intelligence; 22 or 16.30 percent to Intrapersonal Intelligence; 21 or 15.55 percent to Interpersonal Intelligence; 11 or 8.15 percent to Natural Intelligence; 8 or 5.92 percent both belong to Bodily-Kinesthetic and Verbal-Linguistic Intelligence and 5 or 4.44 percent belongs to Logical-Mathematical Intelligence.

4. Relationship Between the Academic Performance and Multiple Intelligences of the Respondents

   - English and Multiple Intelligence

     With the computed r value of 0.95, this is higher than the tabular r value of 0.27 at 50 degrees of freedom and 0.05 level of significance. There exist very high correlations between the two variables which lead to the rejection of the null hypothesis. There is a significant relationship between academic performance in English and Visual-Spatial Intelligence.

     The remaining correlation all resulted in no significant relationship between English and scores in the seven multiple intelligences as the computed r value ranges from -0.25 to 0.34 which is lower than the tabular r value of 0.27 to 0.53 at 0.05 level of significance. The null Ho is accepted.

   - Mathematics and Multiple Intelligences

     There is no significant relationship between academic performance in Mathematics and scores in Multiple Intelligences of the respondents as the computed r value ranging from -0.30 to 0.31 is lower than the tabular r value ranging from 0.36 to 0.95 at 0.05 level of significance. The null hypothesis that there is no significant relationship between the two variables is accepted.

   - Science and Multiple Intelligences

     There is no significant relationship between academic performance in Science and scores in Multiple

Intelligences as all the computed r values range from -0.40 to 0.33 which are lower than the tabular r value which range from 0.40 to 0.95 at 0.05 level of significance. The null hypothesis is accepted.

CONCLUSIONS:

Based on the stated findings, the following conclusions are given:

- Majority of the respondents are male with an average age of 13 years old and whose parents are college graduates and are capable of guiding them in their schooling.
- They encounter much difficulty in English compared to Mathematics and Science.
- The respondents had varied levels of multiple intelligences which range from low to average to high.
- Multiple Intelligences do not affect the academic performance of the students in Science and Mathematics and partly in English. Other factors affect academic performance. Only Visual-Spatial Intelligence affects academic performance of the respondents in English.

RECOMMENDATION:

- There should be a close coordination between teachers and parents so that they will be able to follow-up their children's lessons or assignment, behavior problems, if any through teacher-parent conferences, parent seminars, counseling sessions and other coordinating activities.
- The students should be given more practice exercises or special lessons in English to improve their academic performance in this subject considering that it is a tool subject. There must be a special program in English that addresses the needs of the first year students to strengthen their English communication skills. Likewise, a seminar program may be devised to address the needs of the students in Mathematics and Science.
- The respondents have varied levels of Multiple Intelligences, from low (Logical), to average and finally high. Such levels of Multiple Intelligence could be used to enhance

their academic performance by using the differentiated activities that the researcher is proposing.

- There is no relationship between academic performance in Mathematics and Science and Multiple Intelligence. This finding is true only to the population of this study. Since there is a very high significant correlation between academic performance in English and Visual-Spatial Intelligence, the researcher recommends the differentiated activities to be used by the English Teachers.

- The holistic curriculum development must be prepared to develop the students with respect to their physical, mental, emotional, and spiritual growth. This program will enhance the student's academic performance that will result in high performance to surpass the Vision-Mission of "education for excellence, geared towards a united Filipino-Chinese community".

- Students today live in a multimedia world and appreciate variety in their learning environment. Some forms of literacy they can develop include textual, numerical, visual, audio, and multimedia. Both teachers and students can benefit by developing their abilities to create, use, and evaluate visual resources.

- That the school administrators be encouraged to recognize Multiple Intelligence as a part of assessment tool, not only for the part of students' holistic development but also for academic enhancement of all teachers, non-teaching personnel, and administrators.
- The researcher recommends the following topics for further study:
    - Academic Performance in Social Studies (MAKABAYAN) and Multiple Intelligences
    - Academic Performance and Behavior Problems of Secondary School Students
    - Academic Performance and Behavior Problems using a Comparative Study of Intelligence and Emotional Quotient
    - Career Discernment and Multiple Intelligences of Fourth Year Students
    - Extra-Curricular Activities and Multiple Intelligences of Secondary School Students

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