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Catering Multiple Intelligences of Incoming Grade VI Pupils in Geometry Class

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I. SITUATION

As defined by the Merriam-Webster Dictionary, intelligence is the "ability to learn or understand or to deal with new or trying situations" and the "skilled use of reason". The concept of intelligence has been the basis of learning for it measures the amount of learning a learner has acquired throughout the teaching-learning process.

Alfred Binet, a French psychologist, had presented the concept of intelligence quotient or IQ as means of measuring the learning capabilities of a person. It was then the trend and sole practice on measuring learning through question-answer tests.

Dr. Howard Earl Gardner, an educational psychologist in Harvard University, thought that Binet's concept of intelligence was confined in measuring the linguistic and logical-mathematical dimensions, thus, in 1983 in his book "Frames of Mind: The Theory of Multiple Intelligences", he introduced a concept of intelligences that consists eight dimensions of human ability in dealing and solving problems that happen in people's lives. In this concept, Gardner states that each person excels on one or more dimensions of the eight intelligences and that if a person fails in a dimension, he surely have another dominant intelligence. Unlike Binet's concept, Gardner's idea focuses holistic learning by which the eight dimensions present.

According to Gardner (1999), intelligence is much more than IQ because a high IQ in the absence of productivity does not equate to intelligence. In his definition, intelligence is a "bio-physical potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture." Consequently, instead of intelligence being a single entity described psychometrically with an IQ score, Gardner's definition views intelligence in a much broader way than of psychometricians.

Gardner first proposed and defined seven intelligences in "Frames of Mind". Logical-mathematical intelligence is the ability to detect patterns, think logically, reason deductively and carry out mathematical operations. Linguistic intelligence involves the mastery of spoken and written language to express oneself or remember things. These first two forms of intelligence are typically the abilities that contribute to strong performance in traditional school environments and to producing high scores on most IQ measures or tests of achievement. Spatial intelligence involves the potential for recognizing and manipulating the patterns of both wide spaces such as those negotiated by pilots or navigators, and confined spaces such as those encountered by sculptors, architects or championship chess players. Musical intelligence consists the capacity to recognize and compose musical pitches, tones, rhythms, and patterns and to use them for performance or composition. Bodily-kinesthetic intelligence involves the use of parts of the body to solve problems or create products. Athletes, dancers, surgeons and craftspeople are likely to have developed capacity in this area. The last two intelligences are the personal intelligences: interpersonal and intrapersonal. Interpersonal intelligence indicates a person's ability to recognize the intentions, feelings and motivations of others. People who possess and develop this quality are likely to work well with others and may choose fields like sales, teaching, counseling or politics in order to use them. Intrapersonal intelligence is described as the ability to understand oneself and use that information to regulate one's own life.

According to Gardner, each of the seven intelligences has a specific set of abilities that can be observed and measured. More recently, Gardner nominated three additional intelligences: Naturalist, Spiritual and Existential intelligence and evaluated them in the context of the eight criteria he established in his research and outlined in his paper "Frames of Mind". He defined a naturalist as a person "who demonstrates expertise in recognition and classification of numerous species – the flora and fauna –of her or his environment." Gardner is comfortable with declaring that a Naturalist intelligence meets the criteria he set forth, however

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he is less sure about how to define and incorporate Spiritual and Existential intelligence.

Gardner's perception on intelligence has been questioned and criticized in the psychology and educational theory communities. The most common criticisms argue that Gardner's theory is based on his own intuition rather than empirical data and that the intelligences are just other names for talents or personality types. Despite these criticisms, the theory has enjoyed great deal of success amongst educators since multiple intelligences (MI) delivers a wide variety of strategies in pedagogy. Individual teachers even incorporate the theory in giving classroom instructions and activities. Also, many books and educational materials exist which explain the theory and how it may be applied to the classroom.

In a local classroom set-up, the theory of MI is very much observable. The differences of skills and talents of the children imply difference of intelligences as MI describes. Alongside the perception of learners having different learning styles, the theory of MI indicates the need of different pedagogy and teaching strategies that must be used in the classroom to cater the individual differences of the learners in a classroom. In Maranatha Christian Academy (MCA-Urdaneta), such traits are catered generally by the different subject areas that the school offers. However, the theory of MI explains that teaching strategies should vary so that each of the intelligences is catered on a single course of subject to meet the learning capabilities of each individual learner.

The Mathematics and Geometry classes in MCA-Urdaneta are few of the most disliked subjects of the pupils because of the level of difficulty of the lessons as found by the learners. Only the mathematical-logical intelligent pupils cope up easily on such subjects due to the difficulty of the topics involved in the curriculum outline of the subjects aforementioned, thus, teachers find it hard to let pupils appreciate the subjects. This research tries to break the difficulty on designing a set of activities that could be done for the next school year to cater the multiple intelligences of the incoming grade six class in the Geometry subject to lessen the difficulty of other pupils on the subject who have recessive traits in the mathematical-logical domain.

In this research, the curriculum of MGSSSI in Grade VI Geometry will be scrutinized onto which activities will be designed to cater the multiple intelligences in the classroom hoping that results in such class will improve as to the previous school years wherein learners find it difficult to obtain more decent ratings due to the difficulty of topics present in the subject.

II. RATIONALE

The idea of catering the multiple intelligences in the Incoming Grade VI Geometry class is the main reason of the conduct of this study. Also, the following will benefit upon the completion of this research:

To the pupils. For them to be able to learn more in Geometry with activities that provides learning in the subject in a way that they enjoy and learn most.

To the teachers. They will be able to improve their teaching practices and incorporate different techniques to achieve optimum level of learning without disregarding the multiple intelligences of their learners.

To the school. To step up the quality of education that it offers through more rigid yet enjoyable activities that it will offer to its clients.

To the researcher. To widen his wisdom onto addressing the needs of his learners and to understand the profession in a much deeper perspective.

To the future researchers. The information and insights that will be gained from this study may serve as guide for other researcher in framing their conceptual framework and design and at the same time encourage them to conduct further studies within their area of preferences.

III. PROBLEM

The difficulty of topics present in the Grade VI Mathematics class make pupils less interested in the subject, thus, activities should be aligned to their interest and strength to obtain appreciation in the subject and greater learning results.

This research sought to cater the different multiple intelligences of the incoming Grade VI pupils of the school year 2020-2021 in their Mathematics class. Specifically, this research aims to find answers to the following queries:

1. What is the level of multiple intelligences of the incoming Grade VI pupils of Maranatha Christian Academy of Urdaneta?
2. What possible activities can be given to the incoming Grade VI pupils in their Geometry class to cater their multiple intelligences?

IV. GENERATION OF ALTERNATIVE SOLUTIONS

1. Presentation of lessons should vary and must cater the different domains of intelligences if applicable.

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2. Different activities may be designed that address to different multiple intelligences of the learners in Geometry class.
3. In each topic in Grade VI Geometry, at least a different domain of intelligence should be catered in a balanced way in which after each topic of the subject, activities that address all the domains have been incorporated.
4. Group and individual activities should still be given to cater the personal intelligences of the learners in their Geometry class.
5. Skill-oriented activities may be given to cater skill-related intelligences.
6. Traditional assessment tools such as quiz, recitations and word problem solving should still be given to cater mathematical-logical and linguistic domains in the Geometry class of the incoming Grade VI pupils.

V. PLAN OF ACTION

In pursuit of finding solutions to the problems presented in the previous parts of this research, the actions made are presented in this part of this study.

A. Objective

The focal point of this study is catering the multiple intelligences of the incoming Grade VI pupils on the school year 2020-2021 in their Geometry class. This research aims to produce a set of activities to be given in their Geometry class that will address to the different intelligences of the learners.

B. Time Frame

This research was undertaken from the first week of January until the second week of March, 2021. It is conducted upon the ending of the school year 2020-2021 and before the school year 2021-2022 in which the aim of this research will be applied.

C. Target Participants/Subjects

The research participants are the incoming Grade VI pupils of the school year 2020-2021. The research subject is made up of 27 pupils. This number consists 12 or 44.44% of boys while 15 or 55.56% of the research subject are girls. The research participants are aged 10 to 12 years and are residents of the eastern part of Pangasinan. Fourteen or 51.85% of the pupils are taken as respondents since Gay (1976) as cited by Adanza (2002) states that in a quantitative or descriptive research, a minimum of 20 percent may be required as sample respondents.

D. Activities to be Taken

In conducting a research, the use of time is very essential. From planning until the final assessment of the research, time should be maximized to be able to achieve the goals of the study. The following time table has been formulated by the researcher to optimize the time in obtaining the desired answers for the research questions presented on the preceding parts of this research.

The activities done in accordance to the goals of this research starts from identifying the research problem, followed by observation of the problem until data gathering to its analysis, interpretation and presentation.

The Gantt chart on the next page presents the activities undertaken on the aforementioned time frame in pursuit of this research.

Table 1
SCHEDULE OF RESEARCH ACTIVITIES

Activities	February	March	April
1. Observation of problem and identifying the research subject	1, 4-8		
2. Construction of Research problems and Data Gathering Tool	11-15		
3. Gathering of Resources	18-22		
4. Administering of Questionnaires	25-28	1	
5. Organizing of Data Collected		4-8	
6. Analyzing and Interpreting of Data Collected and Collection of Resources		11-15 18-22 25-29	
7. Final Construction and Revisions of the Action Research			1-5 8-12

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E. Research Design

This study aims to produce a set of activities that will cater the multiple intelligences of the incoming Grade VI class of school year 2020-2021 in their Geometry class.

This study is descriptive in nature for it describes with emphasis what actually exists and ascertains current condition, practice and situation (Ardales, 1992) and it "collects data in order to answer questions about the current status of the subject or topic of study" (Jacobs, 2009). Also, this research is quantitative for numerical data is the basis of answering the research questions presented.

The data collected through questionnaires are utilized to design probable activities to be given in the research subject's Geometry class to cater their multiple intelligences.

The researcher made use of a 5-degree Likert-type questionnaire. It is a validated self-assessment questionnaire for multiple intellilgences used as a tool on existing studies which determined the multiple intelligences of its respondents (Surop, 2002 and Cabais, et.al 2010).

The questionnaire consists eight parts wherein each part has ten indicators which identifies the level of the respondents':

a) Bodily-kinesthetic intelligence;
b) Interpersonal intelligence;
c) Intrapersonal intelligence;
d) Linguistic Intelligence;
e) Logical-mathematical Intelligence;
f) Musical Intelligence;
g) Naturalistic Intelligence; and
h) Visual-Spatial Intelligence.

To determine the level of multiple intelligence of the respondents, the following scale was used:

5 = Very High
4 = High
3 = Average
2 = Low
1 = Very Low

Average weighted mean is used to identify the level of multiple intelligences of the respondents. The following formula was employed to identify the level of the respondents' multiple intelligences:

$$AWM = \frac{5f_5 + 4f_4 + 3f_3 + 2f_2 + f_1}{n}$$

Where: n = total number of respondents
F_5 = total responses under "Very High"
f_4 = total responses under "High"
f_3 = total responses under "Average"
f_2 = total responses under "Low"
f_1 = total responses under "Very Low"

The following table shows the ranges of mean scores onto which the interpretation of the obtained average weighted means was based:

Table 2 MEAN EQUIVALENCES

Average Weighted Mean	Descriptive Equivalence	Description
4.20-5.00	**Very High(VH)**	Respondents are dominant in the trait and often do it
3.40-4.19	**High (High)**	Respondents are dominant in the trait and do it
2.60-3.39	**Average (A)**	Respondents do the trait presented
1.80-2.59	**Low (L)**	Respondents seldom do the trait indicated
1.00-1.79	**Very Low (VL)**	Respondents almost do not do the trait presented

VI. FINDINGS

This part of the research contains the presentation of the findings obtained from the data gathering procedure that leads to the possible answers to the research questions presented.

Level of Multiple Intelligences of the Incoming Grade VI Pupils of MCA Urdaneta

The first research problem sought to determine the level of multiple intelligences of the incoming Grade VI pupils of Maranatha Christian Academy of Urdaneta.

The different level of multiple intelligences of the respondents are identified for it will be the basis on the construction of possible classroom activities

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that will cater the respondents' multiple intelligences in their Geometry class.

Table 3 on the next page shows the average weighted means obtained using the self-assessment questionnaire for multiple intelligences on the eight different domains. Also in the table are the descriptive equivalences of the average weighted means obtained onto which the interpretation and implication of the results are based.

Table 3 LEVEL OF MULTIPLE INTELLIGENCES OF THE INCOMING GRADE VI PUPILS OF MCA URDANETA

Indicator		Average Weighted Mean	Descriptive Equivalence
1.	Bodily-Kinesthetic Intelligence	**3.514**	**H**
2.	Interpersonal Intelligence	**4.236**	**VH**
3.	Intrapersonal Intelligence	**3.407**	**H**
4.	Linguistic Intelligence	**3.657**	**H**
5.	Logical-Mathematical Intelligence	**2.736**	**A**
6.	Musical Intelligence	**4.200**	**VH**
7.	Naturalistic Intelligence	**2.993**	**A**
8.	Visual-Spatial Intelligence	**3.857**	**H**

Legend: 1.00-1.79VL = Very Low; 1.80-2.59L = Low; 2.60-3.39
A = Average; 3.40 – 4.19H = High; 4.20 – 5.00 VH = Very High

On Table 3, the average weighted means of the level of multiple intelligences of the respondents are seen. It can be observed in the table that with a mean of 4.236, the respondents are dominant in their interpersonal intelligence with a level described "very high" followed by musical intelligence with a mean of 4.200, also described "very high".

These two intelligences are observed to be the dominant intelligence, in general, of the incoming Grade VI pupils of MCA-Urdaneta, thus, activities which concern groups and interaction, and music, covers the interest of the respondents.

According to Henry Tenedero (2008) in his book "Cooking Up A Creative Genius", children who are interpersonally intelligent "influence the thinking of others; enjoy the company of friends; leads; share and mediates; establish good eye contact; reflect feelings back to the other person; make other persons feel important; demonstrate genuine interest in other people; work well with people coming from different persuations; link up easily with like-minded and like-hearted people; and highly sociable." He adds up that "enhancement of this intelligence can be achieved if the children with such intelligence are persuaded to get to know people and other cultures; read about the lives of well-known and socially competent personages; initiate and organize intellectually stimulating activities in school or at home".

With such traits, activities which concern interaction among students to teachers and students to students should be present so that better results can be achieved. In terms of addressing such intelligence in the Geometry class, it is good that at times, group activities and brainstorming should be given to the incoming Grade VI pupils for, as the results show, they are dominantly interpersonally intelligent. Bellamy and Baker (2005) suggests that in order to cater interpersonally intelligent children, teachers must "be aware of body language and expressions; offer assistance whenever needed; and encourage classroom discussion" and students must undergo "collaboration among peers; group work; peer feedback and peer tutoring".

On the other hand, musically intelligent children as described by Tenedero (2008) "manifest the penchant to remember melodies; tendency to stimulate beat and rhythm; appreciates the cacophony of environmental sounds; inclination to move the body to the beat of music; play musical instruments; create original compositions; show sensitivity to melody and tone; create and replicate tunes; think in sounds; and carry tune easily". He also stressed that to enhance such intelligence, musically intelligent children are "encouraged to compose a song related to interests; organize a singing group or school choir; use background music while doing homework; create musical mnemonics". Bellamy and Baker (2005) encourage teachers to "play music in the classroom during reflection periods; and show examples or create

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musical rhythms for students to remember things" while encourage students to "create a song or melody with the content embedded for memory; and use well known songs to memorize formulas, skills or test content".

To address musically intelligent children in a class, music should be incorporated to the content. It can be used as a tool by the teacher in presenting a lesson, or an activity on mnemonics to remember definitions and postulates in Geometry can be done for musical intelligence to be catered in the class.

With a "High" level, next to interpersonal and musical intelligences, with a mean of 3.857 is Visual-Spatial Intelligence. Visual-Spatial Intelligence are enhanced, as presented by Bellamy and Baker (2005) with teachers "presenting information using visuals such as Powerpoint slides, charts, graphs, cartoons, videos, overheads and smartboards" and students should "create visuals pertaining to the information studied; making posters, timelines, models, powerpoint slides, maps, illustrations, charts and concept mapping".

Visual-spatial intelligence works well along with Geometry because the content of the subject are basically concerned with the shapes and figures, thus, having this intelligence as one of the more dominant intelligences of the incoming Grade VI pupils makes some topics easier to be understood.

Meanwhile, with the lowest mean of 2.736 or "Average", the most recessive intelligence of the incoming Grade VI pupils of MCA-Urdaneta is Mathematical-logical intelligence. To enhance such intelligence, Bellamy and Baker (2005) suggests teacher-centered activities like "providing brain teasers and challenging questions in beginning the lesson; make logical connections between subject matter and authentic situations" while learners are encouraged to "categorize information in logical sequences for organization, create graphs or charts, participate in web quests associated with the content".

Since Geometry is mathematical in nature and the respondents' most recessive intelligence is Mathematical-logical intelligence, activities should be presented not in a complex manner but of simpler one, incorporating their strengths and dominant intelligences so that the level of anticipated learning on the part of the learners will be achieved.

With the findings on the level of multiple intelligences of the incoming Grade VI pupils of MCA-Urdaneta, dominant intelligences are found to be Interpersonal and Musical intelligence described "Very High", meanwhile, other dominant intelligences described "High" are Visual-spatial, Linguistic, Bodily-Kinesthetic and Intrapersonal intelligences. Found to be recessive to the respondents with a descriptive equivalence of "Average" are Naturalistic and Mathematical-Logical intelligences.

With such results, it can be said that activities of the respondents in their Geometry class should cater the intelligences with higher mean to achieve optimum results in learning the contents of the subject and at the same time strengthen the level of their mathematical-logical intelligence.

Proposed Activities to Cater Multiple Intelligences of the Incoming Grade VI Pupils of MCA-Urdaneta in Geometry Class

The second research problem presented is on constructing a set of classroom activities in the Grade VI Geometry class that caters the multiple intelligences of the incoming Grade VI pupils.

The construction of the class activities are based on the results gathered on the respondents' level of multiple intelligences.

Table 4 shows the curriculum followed by MCA-Urdaneta in the Geometry subject of Grade VI level.

The table on the next page shows the different topics covered in the Grade VI Geometry class in MCA-Urdaneta as well as each of the topics' objectives.

The activities to be proposed are based on the following topics covered in the whole school year. Basing on the results gathered on the preceding part of this study, the year-round classroom activities are designed to cater the multiple intelligences of the learners as well as play on the strength of the learners to enhance the performance of the pupils in the subject.

Table 4
GEOMETRY VI CURRICULUM GUIDE

Trimester	Topic	Objective
	Perpendicular and Parallel Lines	Construct and Identify Perpendicular and Parallel Lines
	Angle Bisector	Bisect a given angle

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FIRST TRIMESTER		Find unknown angle measures in a figure
	Angle Pairs	Construct parallel lines and transversal using compass and ruler Recognize angle pairs formed when lines are cut by transversal Identify unknown angle measures using angle pair postulates
	Montessori Boxes/ Congruency and Similarity	Identify the contents of Montessori boxes I, II and III Identify corresponding parts of similar and congruent triangles Give fractional relationships using contents of the boxes
SECOND TRIMESTER	Perimeter and Circumference	Determine the perimeter and circumference of a regular and irregular figures
	Area	Determine the area of regular and irregular figures and shaded regions
	Surface Area	Find the surface area of a space figure
THIRD TRIMESTER	Volume	Determine the volume of space figures, joint solids and shaded regions
	Square Roots	Extract square root of a number
	Pythagorean Theorem	Understand and find triples in determining a right triangle Find the measure of a missing side of a right triangle

Table 4 presents the proposed classroom activities in each Geometry topic that cater multiple intelligences of the incoming Grade VI pupils of MCA-Urdaneta.

Table 5
PROPOSED CLASSROOM ACTIVITIES IN GRADE VI GEOMETRY CLASS WHICH CATER PUPILS' MULTIPLE INTELLIGENCES

Trimester	**Topic**	**Classroom Activity**	**Multiple Intelligences Catered/ Enhanced**
FIRST TRIMESTER	Perpendicular and Parallel Lines	Drawing parallel lines using rulers and protractors by pairs	Visual-Spatial Bodily-Kinesthetic Interpersonal
	Angle Bisector	Drawing angle bisector individually Use of geometry sticks as angle and measuring angles formed using protractor in groups	Visual-Spatial Bodily-Kinesthetic Intrapersonal Bodily-Kinesthetic Mathematical-Logical Interpersonal

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	Angle Pairs	Use of body parts as lines (by group) Writing lyrics on the definitions of different angle pairs laid into a famous song (by group)	Bodily Kinesthetic Interpersonal Linguistic Musical Interpersonal
	Montessori Boxes/ Congruency and Similarity	Manipulating Montessori boxes Discussing figures formed by joining triangles Relating real-life/natural situations and images that depicts box contents	Mathematical-Logical Visual-Spatial Visual-Spatial Linguistic Interpersonal Mathematical-Logical Visual-Spatial Naturalistic Intrapersonal
SECOND TRIMESTER	Perimeter and Circumference	Use of wooden sticks with different sizes to make different enclosed areas Finding perimeter of different figures found in school yard (by group)	Visual-Spatial Mathematical-Logical Naturalistic Bodily-Kinesthetic Naturalistic Visual-Spatial Bodily-Kinesthetic Mathematical-Logical
	Area	Finding area of different crossword puzzles by counting square units Writing a song to memorize formulas in obtaining area of an enclosed figure (by group)	Linguistic Logical-Mathematical Visual-Spatial Intrapersonal Musical Interpersonal Linguistic
	Surface Area	Searching of different solids in the surrounding and finding it's surface area given only ruler to use (by pairs) Solving word problems concerning surface area given drawings of the solids Making a tune to memorize the different formula in obtaining surface area	Bodily-Kinesthetic Mathematical-Logical Interpersonal Mathematical-Logical Visual-Spatial Intrapersonal Musical Linguistic
THIRD TRIMESTER	Volume	Use of water and containers in discussing volume Bringing materials from home	Naturalistic Visual-Spatial Mathematical-Logical Interpersonal Linguistic

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		of different solid figures and find its volume individually	Bodily-kinesthetic Intrapersonal Naturalistic Mathematical-Logical
	Square Roots	Write a jingle or cheer on the steps in finding the square root of a number and present in class (by group) Picking a number in a fishbowl and extract its square root in the board while discussing the steps	Musical Bodily-Kinesthetic Interpersonal Linguistic Mathematical-Logical Linguistic Interpersonal
	Pythagorean Theorem	Manipulating Pythagorean Insets Drawing triangles formed by real-life objects (ex. Shadow of a pole, etc.) Finding at least five different Pythagorean triples that make up a right triangle by Drawing the Three-Square Proof (by pair)	Bodily-Kinesthetic Mathematical-Logical Visual-Spatial Visual-Spatial Bodily-Kinesthetic Mathematical-Logical Visual-Spatial Interpersonal

The proposed classroom activities stated in Table 4 supports the multiple intelligences of the learners. These can be followed to cater the individual intelligences of the incoming Grade VI pupils of MCA-Urdaneta in their Geometry class. These activities can be practiced along with the traditional assessments followed by the school such as the use of quizzes, activity cards, book exercises and long examinations to let learning be able to address the different multiple intelligences of the learners.

VII. CONCLUSIONS

The following conclusions are drawn as answers to the questions that this research deemed to answer:

1. The level of multiple intelligence of the respondents were found “very high” under Interpersonal and Musical intelligence; “high” on Visual-spatial, Linguistic, Bodily-Kinesthetic and Intrapersonal intelligences; and “average” on Naturalistic and Mathematical-Logical intelligences.
2. Possible classroom activities in Geometry are presented in the preceding parts to address the multiple intelligences of the incoming Grade VI pupils.

VIII. RECOMMENDATIONS

Based on the conclusions of this study, the following recommendations are drawn:

1. Presentation of topics in the pupils’ Geometry class must be in accordance to their dominant multiple intelligences so that they will be able to understand the topics in a deeper manner;
2. The different classroom activities proposed be practiced so that each individual have the chance to excel in the geometry subject;
3. Assessment tools should also cater the different multiple intelligences of the learners to achieve fairness to those who are recessive in mathematical-logical intelligence;
4. Further researchers on catering multiple intelligences in a classroom be done so that the quality of pedagogy will improve for the next generation.

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Appendix A
Letter to the Respondents
PANPACIFIC UNIVERSITY NORTH PHILIPPINES
Institute of Graduate Studies
Urdaneta City, Pangasinan

Dear respondent,
The undersigned is conducting an action research entitled "Catering Multiple Intelligences of Incoming Grade VI Pupils in Geometry Class" as requirement to his course in "Master in Education major in Math".

In connection to this, may you please answer the questionnaire attached herewith according to your sincere feeling in each indicator in the questionnaire.

Your cooperation is very much appreciated.

Thank you and God speed!

Respectfully yours,

SORIANO, SONNY
Researcher

Appendix B
QUESTIONNAIRE
Name: _____ Grade and Section: _____

Direction: Please answer each of the following questions as accurately as you can by putting a check mark (/) on the scale provided in each item with specific indicator.

Use the following scale to interpret your level of feeling on each indicator.

5 - Very High
4 - High
3 - Average
2 - Low
1 - Very Low

	Indicator	5	4	3	2	1
1	Shows interest in motorbikes and automobiles					
2	Eager for exercise and physical fitness					
3	Learn gymnastics, dance or miming					
4	Play physical games					
5	Interested with school plays and other dramatic performances					

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6	Likes to clap					
7	Interested in ball-game activities					
8	Fond of climbing trees					
9	Climbs with agility					
10	Shows interest in martial arts					
	Indicator	5	4	3	2	1
1	Likes having new friends					
2	Gets along with others					
3	Shares or relates stories					
4	People come for an advice					
5	Likes people around					
6	Shares my suggestions and opinions					
7	Talks with others					
8	Comfortable talking with people though not close					
9	Seek others' company					
10	Ease in a crowd					

	Indicator	5	4	3	2	1
1	Spend time for oneself					

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2	Awareness with one's interests and talents					
3	Work best by oneself					
4	Encourages quiet time and time to reflect					
5	Comfortable being alone					
6	Not ease dealing with people I don't know					
7	Talk only with few people					
8	Opts individual project					
9	Leave early at a party					
10	Bored in attending parties					

	Indicator	5	4	3	2	1
1	Remembers the words of a song easily					
2	Like reading magazines					
3	Write letters, either love or business					
4	Expresses ones thoughts easily					
5	English and/or Filipino are my favorite subjects					
6	Remember the lines of actors and actresses					
7	Read something almost everyday					
8	Pay attention to advertisements					
9	Have a rich vocabulary of words					
10	Memorizes trivias					

	Indicator	5	4	3	2	1

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1	Learn different computer languages					
2	Interested with new developments in science					
3	Like subjects which require reasoning					
4	Read about famous mathematicians and scientists					
5	Calculate and solve math problems					
6	Lead science club					
7	Play card games like poker or lucky nine					
8	Participate in brain teaser games					
9	Like working with Rubik's cube					
10	Lead a math organization					

	Indicator	5	4	3	2	1
1	Sing with a piece of music					
2	Life is poorer without music					
3	Remember melodies					
4	Know the tunes of many songs					
5	Easily sing back a music heard over a radio					
6	Know majority of singers of different songs					
7	Tap the table while cooking or studying					
8	Keep a time to a piece of music with a guitar or any instrument					
9	Play musical instruments like guitar					
10	Have expressive voice					

	Indicator	5	4	3	2	1
1	Understand how things work					
2	Love to cook					
3	Watch sunset at the beach					
4	Grow plants					
5	Enjoy hiking and/or observing nature					
6	Like animals					

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7	Tell a grass from a plant					
8	Spend time in the outdoors					
9	Collect rocks or shells					
10	Identify kinds of birds					
	Indicator	5	4	3	2	1
1	Like to draw					
2	Have vivid dreams at night					
3	Like to read books with pictures					
4	Find ones way to unfamiliar place					
5	Take lots of photographs					
6	Enjoy doing mazes					
7	Understand maps or charts					
8	Good at imagining things and charts					
9	Learn books best with colors and pictures					
10	Reading books with illustrations and Graphs					

APPENDIX C

LEVEL OF BODILY-KINESTHETIC INTELLIGENCE OF THE RESPONDENTS

	Indicator	**Average Weighted Mean**	**Descriptive Equivalence**
1	Shows interest in motorbikes and automobiles	2.79	A
2	Eager for exercise and physical fitness	3.07	A
3	Learn gymnastics, dance or miming	3.43	H
4	Play physical games	4.50	VH
5	Interested with school plays and other dramatic performances	4.21	VH
6	Likes to clap	3.79	H
7	Interested in ball-game activities	3.79	H
8	Fond of climbing trees	3.07	A
9	Climbs with agility	2.93	A
10	Shows interest in martial arts	3.57	H
OVERALL		**3.514**	**H**

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APPENDIX D
LEVEL OF INTERPERSONAL INTELLIGENCE OF THE RESPONDENTS

	Indicator	Average Mean	Weighted	Descriptive Equivalence
1	Likes having new friends	4.79		VH
2	Gets along with others	4.36		VH
3	Shares or relates stories	3.79		H
4	People come for an advice	4.21		VH
5	Likes people around	3.93		H
6	Shares my suggestions and opinions	4.07		H
7	Talks with others	4.64		VH
8	Comfortable talking with people though not close	4.00		H
9	Seek others' company	4.07		H
10	Ease in a crowd	4.50		VH
OVERALL		**4.236**		**VH**

APPENDIX E
LEVEL OF INTRAPERSONAL INTELLIGENCE OF THE RESPONDENTS

	Indicator	Average Mean	Weighted	Descriptive Equivalence
1	Spend time for oneself	3.36		A
2	Awareness with one's interests and talents	4.14		H
3	Work best by oneself	3.36		A
4	Encourages quiet time and time to reflect	3.50		H
5	Comfortable being alone	3.36		A
6	Not ease dealing with people I don't know	3.71		H
7	Talk only with few people	2.50		L
8	Opts individual project	2.57		L
9	Leave early at a party	3.86		H
10	Bored in attending parties	3.71		H
OVERALL		**3.407**		**H**

APPENDIX F
LEVEL OF LINGUISTIC INTELLIGENCE OF THE RESPONDENTS

	Indicator	Average Mean	Weighted	Descriptive Equivalence
1	Remembers the words of a song easily	4.64		VH
2	Like reading magazines	4.00		H
3	Write letters, either love or business	2.93		A
4	Expresses ones thoughts easily	3.36		A
5	English and/or Filipino are my favorite subjects	4.36		VH
6	Remember the lines of actors and actresses	3.36		A
7	Read something almost everyday	4.43		VH
8	Pay attention to advertisements	3.14		A

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9	Have a rich vocabulary of words	2.64	A
10	Memorizes trivias	3.71	H
OVERALL		**3.657**	**H**

APPENDIX G
LEVEL OF LOGICAL-MATHEMATICAL INTELLIGENCE OF THE RESPONDENTS

	Indicator	Average Weighted Mean	Descriptive Equivalence
1	Learn different computer languages	3.14	A
2	Interested with new developments in science	2.79	A
3	Like subjects which require reasoning	3.64	H
4	Read about famous mathematicians and scientists	2.29	L
5	Calculate and solve math problems	2.64	A
6	Lead science club	2.21	L
7	Play card games like poker or lucky nine	1.57	VL
8	Participate in brain teaser games	3.71	H
9	Like working with Rubik's cube	3.00	A
10	Lead a math organization	2.36	L
OVERALL		**2.736**	**A**

APPENDIX H
LEVEL OF MUSICAL INTELLIGENCE OF THE RESPONDENTS

	Indicator	Average Weighted Mean	Descriptive Equivalence
1	Sing with a piece of music	4.86	VH
2	Life is poorer without music	4.57	VH
3	Remember melodies	4.50	VH
4	Know the tunes of many songs	4.64	VH
5	Easily sing back a music heard over a radio	4.50	VH
6	Know majority of singers of different songs	3.64	H
7	Tap the table while cooking or studying	3.50	H
8	Keep a time to a piece of music with a guitar or any instrument	3.86	H
9	Play musical instruments like guitar	4.21	VH
10	Have expressive voice	3.71	H
OVERALL		**4.200**	**VH**

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APPENDIX I
LEVEL OF NATURALISTIC INTELLIGENCE OF THE RESPONDENTS

	Indicator	Average Mean	Weighted	Descriptive Equivalence
1	Understand how things work	3.71		H
2	Love to cook	4.14		H
3	Watch sunset at the beach	2.50		L
4	Grow plants	2.07		L
5	Enjoy hiking and/or observing nature	2.50		L
6	Like animals	4.07		H
7	Tell a grass from a plant	2.36		L
8	Spend time in the outdoors	3.50		A
9	Collect rocks or shells	2.50		L
10	Identify kinds of birds	2.57		L
OVERALL		**2.993**		**A**

APPENDIX J
LEVEL OF VISUAL-SPATIAL INTELLIGENCE OF THE RESPONDENTS

	Indicator	Average Mean	Weighted	Descriptive Equivalence
1	Like to draw	4.50		VH
2	Have vivid dreams at night	3.86		H
3	Like to read books with pictures	4.36		VH
4	Find ones way to unfamiliar place	2.64		A
5	Take lots of photographs	4.07		H
6	Enjoy doing mazes	3.43		H
7	Understand maps or charts	3.36		A
8	Good at imagining things and charts	3.64		H
9	Learn books best with colors and pictures	4.43		VH
10	Reading books with illustrations and Graphs	4.29		VH
OVERALL		**3.857**		**H**

CRITERIA IN GRADING ACTION RESEARCH

CRITERIA	DESCRIPTION	WEIGHT	SCORE
Significance	Answers the question if the research is importance to education on the present situation	20 points	
Clarity	The way on how the research is presented as well as its grammatical structure is well-put together.	20 points	
	Parts of the research is well		

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Organization	organized and has followed the correct format of an action research	20 points	
Correctness	The parts of the research are correctly made and are presented according to the standards of technical writing	20 points	
Presentation of Data	Data gathered are well presented through tabular, graphical and/or paragraph form and is easy to comprehend	10 points	
Analysis and Interpretation of Results	Research has well analyzed data, the results found are interpreted correctly, implications of the results are present	10 points	
OVER-ALL RATING		**100 points**	

ANNEX B
LETTER OF REQUEST
PANPACIFIC UNIVERSITY NORTH PHILIPPINES
Urdaneta City
INSTITUTE OF GRADUATE STUDIES

Mr. Marcelo J. Relucio
Administrator, Maranatha Christian Academy-Urdaneta
Sir:
I am presently conducting a research study entitled **"CATERING THE MULTIPLE INTELLEGENCES OF INCOMING GRADE VI PUPILS IN GEOMETRY CLASS"** in partial fulfillment of the subject Teaching Strategies in English with Action Research.
In this connection, I am respectfully requesting your office to allow me to conduct the said study and administer survey questionnaires to our fifth year students.
Thank you very much in anticipation of your favorable response.
Very truly yours,

SONNY SORIANO
Researcher