OPTIMIZATION OF MULTIPLE INTELLEGENCES THROUGH SCIENCE LEARNING FOR SD/MI (ELEMENTARY SCHOOL) STUDENTS

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ABSTRACT

Optimization process of multiple intelligences through science learning for students of SD/MI should be done by the teacher as an actor behind the transfer of knowledge by starting from a positive stigma on the ability of the students. The abilities which belong to the students are various including linguistic intelligences, logical-mathematical, visual - spatial, intrapersonal, interpersonal, musical, and kinesthetic intelligences. The main supporting factor which belongs to the teacher is a sense of caring and sharing the equal treatment of all students. Starting from this perception, it will create a sense of high con f dence for teachers on how to teach their students. Integration of science with multiple intelligences can be started by inserting the materials of science to the diverse student learning skill such as playing a character, in which it is a kinesthetic intelligence that is combined with the material of science which will be studied. The methods used are intended to encourage the student interests. The application of multiple intelligences can be applied in science learning with a method that is very varied and diverse. Thus, a teacher must have the motivation and professional skills in teaching science to the students.

Key words: *Optimization, Multiple Intelligences, Science Learning*

A. INTRODUCTION

In the process of education surely a teacher f nds many things related to the problems of their students. There is a very *extrovert* students even there is a very *introvert* students. *Extrovert* students refer to the students who have exceptional character which this condition can be categorized as hyper-active child who is not close to the outside world, while *introvert* students are the students who are close to the situation around them so that the teacher should be able to open the students' nature in order the *transfer of knowledge* can be run well as the expectation of teacher. However, in this the situation the teachers are required to have a role in the understanding of the characters which belong to the students themselves. Hence, the learning process here means the students understand the teachers who give understanding to them in order the process of knowledge transfer can reach an optimal point.

Based on the existing problems can be drawn a conclusion that learning style of each student has diversity or plural. Some are happy with the way by learning to music, drama, or even by using a method of self actualization. Considering from the variety of learning methods can be obtained the result of analyses that every student has various intelligences (multiple intelligences). The various characters and natures and the different brain in receiving stimulants are a challenge for a

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teacher to be able to provide their knowledge in different ways. Therefore, the quality school is a school which assumes that there is no stupid student and there is no teacher who cannot teach.

One of strategies that can be used by teachers to optimize multiple intelligences belongs to the students is to use science learning as a pathway to provide a transfer of knowledge. The science learning is integrated with the learning material presented to provide optimal understanding to the students, for instance by throwing a ball or playing to open the bottles, where learning science can be found here. Throwing the ball is a physical science lesson that applies the theory of gravity, and then in opening the bottles is applied the theory of how to use a lever.

B. MULTIPLE INTELLEGENCES

Intelligence is not fxed. Intelligence is like the ability or skill that can be cultivated and developed. Intelligence is the ability to solve a problem, the ability to create new problems to be solved, the ability to create something or offer a service that is a valuable in a culture. In this case, Gardner states that:

> *An intelligence entails the ability to solve problems or fashion products that are of consequence in a particular cultural setting or community. The problem solving skill allows one to approach a situation in which a goal is to be obtained and to locate the appropriate route to that goal*.[2]

Furthermore, another opinion states that the theory of multiple intelligences is the highest validation of the idea that individual differences are important. The application in education is very dependent on recognition, acknowledgment, and appreciation for each or the various ways of students (learners) learning, besides recognition, acknowledgment, and appreciation for each interests and talents of individual learner.[3]

Gardner also states that there are seven intelligences that can be used in learning, namely: 1) linguistic intelligence (related to language), 2) logical-mathematical intelligence (related to mathematical and logic reasoning), 3) visual-spatial intelligence (relating to space and pictures), 4) musical intelligence (pertaining to music, rhythm, and sound or voice), 5) bodily-kinesthetic intelligence (relating to the body and gestures), 6) interpersonal intelligence (related to interpersonal relationships, social), 7) intrapersonal intelligence (associated with things that are very personal). [4]

The seven intelligences in the multiple intelligences can be described as belowed:

1. Linguistic intelligence

   Linguistic intelligence is the ability to use words effectively, both in speaking and in writing. This intelligence includes sensitivity to the meaning of words, word order, sound, rhythm and intonation of words that are pronounced. It also includes the ability to understand the power of words in the altered state of mind and to convey the information.

2. Logical-Mathematical Intelligence

   Logical mathematical intelligence is the ability of someone in problem solving. Someone will be able to fgure out and put together a solution (exit) with a logical sequence (sense). Moreover, he/she likes numerals, sequence, logic and coherence. Further he/she understands this system and capable of doing the inductive and deductive thinking. Deductive thinking process means

2 Julia Jasmine. *Mengajar dengan Metode Multiple intelligences Implementasi Multiple intelligences.* (Bandung: Nuansa, 2007). pg. 35.

3 *Ibid*. *Mengajar dengan Metode Multiple intelligences Implementasi Multiple intelligences.* pg. 11.

4 Gardner, Howard. *Multiple intelligences* (Batam Centre :Interaksara, 2003). pg. 23.

the way of thinking from the big things to the small things. Inductive thinking process means the way of thinking from small things to big things.

3. Visual and Spatial Intelligence

   Visual and spatial intelligence is the ability to see and observe the visual and spatial world accurately (carefully). Visual means picture. While spatial relates to the space or the place. This intelligence involves awareness of color, line, shape, space, size and also the relationship among these elements. This intelligence also involves the ability to see the object from different angles.

4. Musical Intelligence

   A musical intelligence is the ability to enjoy the music, observe, distinguish, fabricate, form and express musical forms. This intelligence includes sensitivity to rhythm, melody and timbre of the music which is being heard. Music has a profound influence on the development of math and science abilities in a person.

   Based on the results of researches in seventeen countries on the ability of students aged 14 years in the fields of sciences are found that children from the Netherlands, Japan, and Hungary have the highest achievement in the world. When they are examined more deeply, the countries incorporate this element into their curriculum. In addition, the music can also create an atmosphere that is relaxed yet alert, can encourage enthusiasm, stimulate creativity, sensitivity and ability to think. Learning by using the right music will greatly help us in improving memory.

5. Interpersonal intelligence

   An interpersonal intelligence is the ability to observe and understand the meaning, motivation and feelings of others. It is also sensitive to the expression of the face, voice and body movements of others, and he/she is able to respond effectively in communicating. This intelligence also is able to get into the other person, understand the world of others, understand the views, understand the attitudes of others and generally he/she is able to lead the group.

6. Intrapersonal intelligence

   Intrapersonal intelligence is the ability of someone relates to the consciousness and self knowledge. He/she is able to understand his/her own strengths and weaknesses. He/she is also able to motivate his/herself and to do self-discipline. Someone who has this intelligence is very appreciative to the values (rules) of ethical, and moral.

7. Kinesthetic intelligence

   A kinesthetic intelligence is the ability to use body skillfully to express ideas, thoughts and feelings. This intelligence also includes the physical skills in the areas of coordination, balance, endurance, strength, flexibility and speed. [5]

   The teachers realize that every child has all of the intelligences, but they have different levels. Teaching overall intelligences will ensure them to be superior; for example, in the musical intelligence will give them the opportunity to learn using that intelligence. [6]

The concept of multiple intelligences is a critique to psychometric which is commonly used to measure human intelligence based solely on the strength of the human left brains. During the measurement of intelligence is only on the quantitative aspects (logical) and verbal. Humans who have low scores based on these tests are considered to have a low intelligence level or called low IQ

5 Riyadi Mubdi Zhaahir. *Multiple Inteligences.* Accesed on 25 November 2013. http://www.wikimu.com/news/displaynews.aspx?id=2108.

6 Johnson, Elaine.B. *Contextual Teaching and Learning*. (Bandung: Mizan, 2007). pg. 67.

(Intelligence Quotion). Measurement of intelligence with an IQ in the development is considered unrepresentative, because there are a lot of facts that man with a low IQ is more successful in life than a man who have high IQ level. People with a mediocre IQ is found to have great competence in specific areas, such as painting professional, sport professional, singing professional, and others. The strengths which drive the multiple intelligences tests are the tests which are usually done inconsistently on well-established major scientific theories. Multiple intelligences is not a domain or a discipline. The concept of multiple intelligences is a new type of construct, but the multiple intelligences is not similar to the style or learning style, cognitive style, or style of work.

Multiple intelligences as a new concept impact on the design and curriculum of the school. The theory of multiple intelligences suggests that there are some human intelligence which are relatively independent and can be combined in a multiplicity way in order to suit each individual and culture. The independence of each type of intelligence can be shown in the case those who cannot master mathematics, but they can produce or understand the beauty of a painting or a song composition quickly. Another case, a person who cannot have verbal and spatial ability, but he/she is very smart in motion or kinesthetic. In human beings there may be one, two, three or more types of intelligences that stand out. This type of intelligence may further relate to learning style and life style.

C. OPTIMIZATION OF MULTIPLE INTELLIGENCES THROUGH SCIENCE LEARNING

Related to the learning process, Winkel opines that learning is a mental or psychic activity, which takes place in the environmental and active interactions that result a number of changes in the understanding of knowledge, skills and attitude values, and the change is relatively constant and impressive. Correspondingly, the local design is needed to maintain and direct the students to the stage that does not stagnate on the knowledge about where they live so that they better understand and know the available resources around them that have the potential to be empowered.[7]

In the optimization process of multiple intelligences there are some things that should be known in advance by the teachers. One of them is they are required to have a perspective that no dumb students. The statement shows that there is no fool students, however why there are many students have less academic and character values or lower than expected.

According to Munif Chatib, the theory of multiple intelligences offers fairly fundamental changes in the assessment as the output of a learning process. This theory suggests a system which does not rely on tests that are based on the formal score, but the tests are more based on the authentic assessment that refers to specific criteria by using the test that have a specific reference point and *ipsative* (a test that compares the student achievement today with the previous performance). Based on this, the students' potential development will be attached and make the level of consciousness and their potential is more immune to any changes that occur. [8]

The problem arises because the teaching way of teachers is still far from expectations. They are still using monotonous conventional method in teaching –learning process, and it is too easy to be guessed by the students who are mostly bored with such methods. Therefore, in order to optimize the process of multiple intelligences goes well, of course, the teachers should also strive to provide the best solution through a new breakthrough innovative and creative teaching methods.

7 Winkel, W.S. *Psikologi Pengajaran*. (Yogyakarta: Media Abadin, 1999). pg. 59
8 Munif Chatib. *Sekolahnya Manusia* (Bandung: Kaifa, 2011). pg. 155

Science learning is one of the subjects that can be used as an example in the optimization of multiple intelligences. For instance, in a physics class, the material is about levers. There is a super hyper - active student which is very difficult to set up. Then the teacher as a parent and teacher at the school of course is obliged to seek a solution to the problem by finding out what he/she likes and what can encourage his/her to something positive in the classroom. If the student has a high kinesthetic intelligence thus the usual methods cannot accommodate the intelligence, so give his/her a breakthrough method, for example, is to give an active role to the student as an object of lever material or tool holder so that he/she would have a sense of responsible and able to follow the lesson like the other students.

Based on the cases above can be known that the optimization process of multiple intelligences consists of several factors such as the internal motivation of teachers, the appropriate teaching methods, the equal treatment of all students, and of course the positive thoughts that no students are stupid. Here is the optimization of multiple intelligences through science learning for students of SD/MI: [9]

1. Science learning process that develops verbal linguistic intelligence

   The learning process which develops verbal linguistic intelligence can stimulate the development of multiple intelligences in each subject including science, or *IPA*. Some ways to do in learning to develop verbal linguistic intelligence in science learning is to listening to the material that will be covered from the cassette or from information that is directly delivered by teachers, classroom discussion, making an observation reports, conducting interviews, finding the materials to complete the task, writing scientific papers and so on.

2. Science Learning which develops mathematical-logic intelligence

   In science learning, the noteworthy things in teaching is the application of basic science concepts appropriately in making decisions every day and help the students recognize the relationship between science and technology in society. The application of mathematical-logic intelligence in science learning can be in several ways, namely:

   a. The scientific method

      The scientific method is a way to find scientific products trough step-by-step logically and mathematically. The general process of empirical scientific method is: finding a problem, formulating a hypothesis or provisional estimates, testing the hypotheses by performing experiments, drawing conclusions, and testing conclusions.

   b. Thinking scientifically based on curriculum

   c. Deductive logic

      The deductive logic is a way of thinking by outlining the general concept to a specific concept. For example:

      i. Syllogism is an argument that is composed from the rationale and the conclusion.

      ii. Venn diagram uses complementary circle to compare a bunch of information.

   d. Inductive logic

      Inductive logic is a way of thinking of someone by considering special facts

9 Sri Wahyu Widyaningsih. *Multiple Intelegensi Dalam Pembelajaran* http://sriwahyuwidyaningsih.blogspot.com/2012/01/multiple-intelegensi-dalam-pembelajaran.html accesed on 1 December 2013

general conclusion analogically.

e. Improving learning and thinking

To improve the students' thinking, teachers use instructional media in learning.

f. The process of thinking mathematically

Mathematics is the subjects which have specifcally abstract thinking and hard, so the children are not interested in. For the teacher can construct the teaching-learning with pattern images, graphics, and codes to cause them curious.

g. Working with numbers

Students who like the thoroughness will discover the pleasure of working with numbers such as measurements, opportunities, and problems in the form of a story.

h. Technology that increases the mathematical-logical intelligence

Students can learn effectively by using interested software.

3. The learning process which develops a music intelligence

Music has a close connection with someone's emotional, namely:

a. Providing a friendly atmosphere when the student enters the room.
b. Offering the ease effects after doing physical activity.
c. Smoothing the transition between classes.
d. Generating the energy back which has been falling down.
e. Reducing the stress.
f. Creating a positive atmosphere in the school.

The methods that can be done to develop musical intelligence at school for instance: a) install a soft and universal music background in the school, b) through the learning of each feld of study in the schools for instance creating the theme songs of the material which is being taught, c) learning processes that develop kinesthetic intelligence.

There are various tactile-kinesthetic activities that aims to enhance the student learning in the age of SD/MI (elementary school), namely:

a. Physical environment: classroom area, in classroom planning, the teacher makes the room where can make sense of the students became excited.
b. Drama: theater, role play, creative play, simulation (a state that mimics) the real situation.
c. Creative motion: understanding the physical knowledge, introducing creative movement activities, applying the basic skills of creative movement, creating the content that is more focused on the movement activities.
d. Dances: dance sections, a series of learning through dance.
e. Playing instruments: task cards, task card puzzle, drawing the additional tools, making signs for classrooms.
f. Classroom game: Beast hunted (scavengers) large foor games, the games which respond totally physical motion, repeating the game in general.
g. Physical Education: the characteristics of a physical teacher, educational adventure, spider web, a pyramid of ten people, adventures of ten people.

h. Training opportunities

i. A trip to the wild

4. The learning process which develops visual-spatial intelligence

This learning process is a process that develops the perceptual abilities. Imagination and esthetical in the book Mc.Kim *Experience in Visual Thinking* identi f ed three broad components of visual depiction; they are the external picture that we perceive, the internal picture that we dream or we imagine, the picture that we create through irregular images.

5. The learning process which develops interpersonal intelligence

To build a positive interpersonal environment, an effective group is needed. The criteria are: a) warm and open classroom environment, b) teachers and students together make rules and sanctions based on humanity, c) the interdependence of the learning process, means an active role and contribution from all students, d) the learning is to aim learning from the curriculum, from friends, and from experiences. e) Duties and responsibilities are divided equally, so that each member of the class feels important in the classroom.

5. The learning process which develops intrapersonal intelligence

The development of intrapersonal intelligence can be done through several things including: a) establishing an environment to develop self-knowledge, b) supporting self esteem, c) composing and achieving the goals, d) thinking skills, e) emotional skills education in the classroom, f) writing journal, g) knowing themselves through the others, h) re f ecting astonishment and life purpose, i) self-directed learning, j) technology that enhances the interpersonal intelligence.

6. The learning process that develops naturalism intelligence

This learning process is a process that develops the naturalism students ability: a) organizing the school environment to be green and lush, b) when studying the materials which are related to the classi f cation of plants, ecosystems, environmental pollution, invites the students directly to the nature, c) the school provides the teaching tools such as the torso and the chart of the human body organs, d) applying the lessons of agriculture or f sheries that are adjusted to the local conditions respectively, e) the school develops the learning processes that can arise the students' concern for the environment.

7. The learning process which develops the emotional intelligence

The emotional learning can improve cognitive learning system, whereby an emotional brain involved in logical reasoning learning as strong as the brain thinks. The things that can be implemented by teachers in developing emotional intelligence are as followed: a) the teacher should begin the lesson with a gentle demeanor, by gradually increasing the enthusiasm, b) creating an atmosphere as desired by students, c) teachers can move students slowly to the social circumstances which has different emotional, d) when teaching. the teacher should develop a sense of humor to reduce the tension that may arise due to lack harmony between teachers and students.

8. The learning process which develops the spiritual intelligence

The learning process should expand the scope of the Quranic verses and the meanings contained in it, so it will be deeply rooted in the soul and mind of students by drawing lessons from the material learning which is presented to students. Material implications of science learning in developing spiritual intelligence are very much, as an example about the solar system. In these materials the students are required to master the sun

as a star, the sun as the center of the solar system, the earth's rotation and revolution, 9 kinds of planetary movement and so on. At the end of the lesson the teacher invites students to observe the regularity of motion in the solar system and connect it to the letter *Yasin* verse 37 to verse 40 which means:

"And as a sign of the greatness of Allah for them is the night, we remove the day from the night, then while they were in the dark. And the sun runs its place circulation. Such is the command of Allah the Almighty, the All-Knowing. And We decreed place of the moon, so (after he came to the last passage) back to the old form tanndan. It is not possible for the sun to overtake the moon and the night could not outstrip the day. Each orbits on geostationary orbit".[10]

D. CONCLUSION

If the optimization process of multiple intelligences through science learning want to run optimally, of course the teachers as actors behind the transfer of knowledge have to start with a positive stigma against the ability of the students. The multiple intelligences are a diverse distinction which is owned by the students considering to their basic abilities differently.

In this case the students have different abilities as stated by Howard Gardner that there are seven types of intelligences include Linguistic intelligence, Logical-Mathematical, Visual-Spatial, Intrapersonal, Interpersonal, Musical, and Kinesthetic Intelligence. From the seven intelligences that exist in their students need different approaches so that the teachers are required to have a creative and innovative teaching in order to do not make the students become bored.

The supporting factors of optimization multiple intelligences through science learning is started from the teachers who are required to have a sense of caring and sharing the equal treatment for all students, because the teacher basically is an organism of educational management which has the function as the students' entrance academic. Hence, the teachers are also required to have the perception that no students are stupid and there is no teacher who cannot teach. Starting from such a perception, it will create a sense of high con f dence for teachers on how to teach their students.

Integration between science and multiple intelligences can be started by inserting materials of science to a diverse student learning ability, for instance through a role play-it is a kinesthetic intelligence which is combined with science material to be studied. The methods used are intended to foster the student interests.

E. SUGGESTION

Related to the development of students skill, the teachers are required to have the appropriate soft skills to the development of education which is growing at present, besides the teachers refers to a rule of the education system (curriculum). Preliminary understanding to a curriculum culture can be a solution when it is done optimally. In curriculum 2013, there is a solution that the genetic is almost similar to Multiple Intelligences methods. Here, the role of the teacher as an actor behind the successful students is necessary to be tested due to every student has different capabilities in capturing a subject matter, so teachers need to make new methods in action as a teaching materials to raise students' motivation in learning in order to do not make them feel bored with monotonous method.

The application of multiple intelligences which is applied to the materials of science can be

10 Surat Yassin. Ayat 37 – 40. Kementerian Agama RI.

highly variable and various methods, considering to the science as a discipline which has many branches such as: Physics, Biology, Chemistry, and so forth. Thus, the focus of the science teachers as well as the science learners should have an extra ordinary motivation and ability in teaching science to the students.

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THE REFORM OF LEARNING SCIENCE THROUGH MULTIPLE INTELEGENT PARADIGM TO AGAINST CURRICULUM IMPLEMENTATION 2013 IN SD/MI

(Considered From The Dynamics Between Teacher And Student)

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ABSTRACT

Science education quality improvement efforts in Indonesia is not enough by changed the curriculum. The curriculum change has to be followed paradigm shift in learning science, from teaching paradigm to the learning paradigm. The learning paradigm can be realized by either integrating the knowledge, senses, environment, curriculum, and the sense of mind (intelligence variety) owned by each student. Comprehensively it can maximize the diverse capabilities of multiple Intelligence owned science students in the learning process. By using the paradigm of learning -based multiple Intelligence and scientifc approach to the curriculum in 2013, students are guided to reconstruct the knowledge that needs to be capable by observes the students' characteristics of various types of intelligences. Learning of science should be meaningful for them. It means the students, in learning science, should be able to see that science is important for them to face life in the future. The students need to be exposed to the problems which is realistic and contextual in purpose it can not be imagined by students and starting from what have been experienced and known by students. Therefore, in line with the pillars of the curriculum in 2013 that is productive, creative, innovative, and affective then the teacher must understand the characteristics of students' diverse capabilities so that science can be understood well by students not only as the level of knowledge.

Key words : *Reform, Learning science, Paradigm, Learning, Multiple Intelligence.*

A. Introduction

School is a learning place for students to prepare themselves to face the future. The future is full of challenges and different from their future which is learned in previously years in school. The rapid development of technology and science making a change the condition from year to year. About 10-15 years ago, globalization is still a discourse, but now has become a reality. The need for mastery of science increased. Relational understanding in learning science more important and meaningful than instrumental understanding.

Because of rapidly changing circumstances, the school should be able to adjust toward the change so that the graduates are not left behind and get into trouble later in creating jobs for

themselves and for others. As a consequence, curriculum in school have to adjust to the demands of the times, especially the advancement of science, technology and information. Then it is natural if the curriculum change regularly.

However, the curriculum changes are not enough. Change the curriculum does not change the way of thinking itself. Curriculum changes are not followed in practice by a change in the learning and assessment process which is used. Since from the beginning, the teaching paradigm is used in learning process[1]. Teachers actively transferring knowledge to the students' mind and students passively receive it. Understanding which is achieved by the students is only instrumental understanding. Students complete a question of physics and chemistry merely using the formula without understanding why using these formulas or why students use certain strategies. Students use these formulas because it is what the teacher taught. Often students do not dare to use their own way, afraid of being incompatible with what is taught by the teacher. Students' way of thinking is simply an imitation of the teacher's way of thinking. Students are no longer as themselves, but they become a small robot in their way of thinking.

Similarly in the process of learning, the way how to collect student's learning result data do not change. The assessment which is used always a kind of objective tests with its variations. Even, learning process ultimately affected by the assessment which is used. Learning is for testing. The important thing is to pass the test and get a high score. Finally, schools are racing to pursue high score of the UN, so that all efforts of learning is directed to make students able to answer the questions of National Exam or questions for college entrance exam. Though National Exam is not a measure whether someone understands toward what they have been learned. Since there is no change in theleaning paradigm of science and its evaluation then the quality of the graduates of our schools become low. Passive learning habits from elementary through high school bring into college. Is it not strange, when students were asked about the concepts they have learned in school they did not want to answer (probably because they could not answer, possibly due to fear of being wrong or because they are not sure of the answer).

1. The need for a change paradigm in learning science universally

To face the challenges of the present time, curriculum which is going on needs to be changed. The purpose of learning is not just to know, but the student can apply and able to do what they known. If during the learning process is more geared to make students knowing something (facts, concepts, procedures) by transferring knowledge into the student's mind, then it is not enough anymore.

Science deals with the way how to find out about nature systematically, so that science is not only for mastery the knowledge collection in the form of facts, concepts, or principles, but also a process of discovery. Science education is expected to be a vehicle for students to learn about themselves and the environment, as well as prospects for further development in applying them in everyday life. The learning process emphasizes to provide direct experience to develop competence in order to explore and understand the nature scientifically. Science education is directed to do and inquiry so it can help learners to gain a deeper understanding of the nature around. Science is scientific knowledge, it is knowledge that has undergone the test of truth through the scientific method, with the characteristics: objective, methodical, systematic, universal, and tentative[2].

Basically science is watch over in terms of products, processes and the development of attitude.

1 Marpaung. 1998. Dan Mengajar ke Belajar Matematika. Makalah yang disajikan pada Seminar Rumpun MIPA, USD, Paingan, Yogyakarta. 10 Juni 1998

2 Depdiknas. 2007. Panduan pengembangan pembelajaran IPA terpadu SMP atau MTS. Jakarta. www. puskur. Net

These three dimensions are interrelated. This means that the learning process of science should contain the three dimensional science. Similarly, Carin and Sund defnes science as a systematic knowledge and structured regularly, generally accepted (universal), and in the term of data set of observation and experimental result[3]. According to Collette and Chiappetta, essentially science composed of three dimensions, they are:

> 1.Science as a way of thinking such as human is enormous curiosity, imagination, and desire to understand phenomena, and then they possess attitudes, beliefs, and values that motivate them to answer questions and solve problems; (b) Science as a way of investigating such as human is desire to understand nature and to discover its laws must study objects and events with manner experimentation, observation, hypotheses, tested and validated; (c) Science as a body of knowledge from the scientifc disciplines represents the creative products of human invention such as the facts, concepts, principles, laws, theories, and models specifc for the content science[4].

According to Carin and Sund, science has three essential elements. They are:

> (a) *Processes or methods as ways of investigating problems, observing such as making hypotheses, designing experiments, evaluating data and measuring; (b) Products such as the facts, principles, laws, theories; (c) Human attitudes as beliefs, values, opinions*[5].

Referring to the notion of science, then science is essentially composed of four dimensions:

1. Attitudes: curiosity toward the object, nature phenomenon, living creature, and causal relation which is rise new problem that can be solved through the proper procedures.
2. Process: The procedure of solving problems through scientifc method; scientifc method are arranging hypothesis, design of experiments or trials, evaluation, measurement, and drawing the conclusion.
3. Product: it contains facts, principle, theory, and law.
4. Application: the application of scientifc method and concept of science in everyday life.

Students have to understand what they are learned and able to use that knowledge to solve problems, draw conclusions logically, well communicate, and able to see the connection between a concept with other concepts. That competence which is expected from the students who is studying science. Curriculum based on competency intended in order that students who learn science try to seek that competence. Despite, even it is a good intentions, if not accompanied by a willingness to change the way of thinking, then the purpose will not be achieved as we have experienced so far. There is needs a new reform in learning science, at least it includes three aspect:

1. The change of learning paradigm from teaching paradigm to learning paradigm.
2. The change of evaluation paradigm, from evaluation that relies on standardized test (objective test) as type of assessment to the evaluation which based on variety of assessment.
3. The change of paradigm which emphasizes ratio to the paradigm which is blend to the various type of intelligence that includes rational intelligence, emotional, and spiritual, or according to Gardner (in Bellanca, et.al.) are classifed into:
    1. Intelligence logical/mathematical

3 Sulistyorini. 2007. Pembelajaran IPA sekolah dasar. Semarang: Universitas Negeri Semarang.

4 Collette dan Chiappetta. 1994. Collette, A. T., & Chiappetta, E. L. (1994). Science instruction in the middle and secondary schools. New York: Macmillan Publishing Company.

5 Carin dan Sund. 1989. Teaching science through discovery. London: Merrill Publishing Company., A Bell., & Howell Information Company.

2. Intelligence verbal/linguistic
3. Intelligence musical/rhythmic
4. Intelligence motor/kinesthetic
5. Intelligence visual/spatial
6. Interpersonal intelligence
7. Intrapersonal intelligence
8. Naturalistic intelligence[6].

For example, learning science in elementary school, it is developed the concept of SANI (polite, open and communicative) as a modification of RANI (friendly, open and communicative). Friendly is not equivalent with courtesy. Friendly has connotation on the way how to speak while courtesy has connotations in term deeds. People who act friendly is not consider to have courtesy, because a lot of people who speak smoothly, it sound polite but the actions are not same as what is said. In contrary, courtesy describe the actions of people who are generally friendly. If the child wants to be a well-mannered, they should be treated in a dignified manner not only required them in order to be well-mannered. In this case, adults who need to understand the characteristic of the children, it is not the children who should be demanded to behave and understand adults. In other words, an adult should be able to manage their emotions when they are dealing with a child, according to their judgment, that deviate from the general rule and adults can guide children to be open minded (think rationally) in communicative way so it can be accepted by child.

4. The problems that might appear on Teachers and Students

It is proper that in starting something new will show-up problems. The problem is whether we want to solve the problem. Willpower is not the same as desire. But the will can not arise due to several constraints such as:

1. Students which is only being passive toward the changes around them especially development of the science that is increase rapidly, it is caused during their learning of science education they only learn theory so that students are not able to respond the problems which is arise especially to look for solution of these problems.
2. Students are still dependent to the teacher, so they are not independent in constructing knowledge. Their knowledge only stock-still to the information which is provided by the teacher.
3. Teachers feel they have received additional burden without additional incentive. It can be understood because teachers have been long-serving in education without adequate remuneration.
4. The most difficult is to change habits, moreover if the habit is considered enough or good.
5. Reticence. There is desire to change but feel that have a trouble to do it and do not want to share to others, especially to the boss.
6. Stay still attitude until there is instruction. This thought pattern become a culture, so that people no longer creative. Moreover, if the desire to do a reform has no appreciated, it is inhibited with various reason and rules.
7. The lack commitment from the top to improve the quality of education and respect the teachers truly.
8. Unfamiliar synergy. Interaction, collaboration, and reflection are a way to overcome the problem.

6 Bellanca, et.al., 1997. Multiple Assesment for Multiple Intelegences. Arlington Heights: IRI Skylight.

5. Evaluation between teacher and student

Knowledge called science can not be transfered from someone who knows to people who are learning. In learning science, teachers should not move knowledge from their mind to students' mind through lectures (taught) but help students to construct knowledge in their mind. Teacher need to create condition that enable students to do constraction process, for example: students' learning time is no longer controlled by the teacher but by the students themselves. The subject matter is no longer atomistic but holistic. Teachers help student in order that something potential become actual. Another way is through interaction and discussion with friends which is led bt teacher. Someone interested in learning something if they could see something which is learned can be used to fulfll their needs, in other words useful to them. Therefore, learning science has to be meaningful, it means students see that science is important for their future because it can help them to solve problems they faced. In this way students begin learning from problem that are realistic, means it can be imagined by students, or it has connection with the real world. This kind of learning approach called as contextual or realistic approach. By this kind of learning opportunity for the students to gain relational understanding become larger. Paradigm as basis of learning is called *learning paradigm*.

This change is not easy todo, because it is difficult to change habits that have been carried out for years. Moreover, if what it has been doing become a belief. Altough it is difficult, that change is needed in order that we can catch up with the other nation. The reform by change paradigm of learning science need to held now together with curriculum change that will come. Because, if not then the intention of the curriculum will not be achieved.

6. The science essence in teacher's and student's perspective

The essence of science needs a critical study. This will certainly bring a consequence to other people persepctive in responding and comprehending the essence of science. The consequence of people perspective (teachers) to what is a science in a narrow scope will bring a color to a study applied when a teacher performs an activity with children in a science study. Actually a more completed understanding in describing science, doesn't certainly perceive a science as an imaginary knowledge bank. Before the curriculum based on competence is applied, teachers consider sciences only in mind and the characteristic of sciences theoretic so the students only imagine every knowledge about science in their mind without consistency or application after they study sciences. Finally teachers and students perceive cyinically to sciences whereas the sciences is very important to the future of students. Therefore, it is necessary to start it by the teacher first to understand science definition in wider perspective. Several definition of sicience are in the following:

1. Science as a bank of knowlege
2. Science as an exploration process
3. Science as a bank of value
4. Science as a way to know the world
5. Science as a social institution
6. Science as a result of human construction
7. Science as a daily activity

The principle of lecturing process is lecturing, whereas lecturing is a change process of individual behavior that is relatively persistent as a result of experience. Therefore, study is an exertion of condusive environment in order to the study process can grow and develop. Because

the study characteristic is engineer, the process of preparation involves a purpose. In sociological perspective, study process is a process of student preparation in order to be able to have their life in a society. School is social system that is a miniature of wide society. Therefore, study process cannot be separated from a socialiszation process and what are studied in the school should be re fections of real condition around the students that can be exploited or implemented in a society[7].

Study is an arranged combination involving human unsures, material unsures, facility unsure, equipment unsures, and procedure unsures that are in fuencing each goal of study[8]. In a study, there are four steps: a) a preparation as a surface of interest, b) delivery in the frst meeting with new knowledge and new skill, c) a training of new knowlege and skill intregration, d) a result performance as an application of new knowlege and skill to a real condition. Science is a *body of knowledge* that has been examined, that can be expressed in the form of general principle[9]. David states that:

> Science is something that is discovered, some experimenting about the world around us, experimenting about things that will help us, facts about nature, what a scientist works on, facts about the earth and atmosphere, friction and tests about nature, trying to solve problems, the world's history, nature of the world, discovering new things, about the facts of the world, making things easier around home, chemicals and research[10].

It means science is a process of fnding something by some experiments about worls is round, natural fact, earth, and atmosphere, trying to resolve natural problem, fnding something new about world fact, making something ease for environment and research.

Science is defned as a knowledge that is gotten through data collection by using an experiment, observation, and conclusion to produce an explanation about a believable indication. There are three skills in sciences tha are: a) a skill to know what is observed, b) a skill to predict what doesn't happen yet, and a skill to examine the follow-up of experiment result, c) scientifc development. An activity of science study includes a skill development in giving a question, fnding an answer, understanding an answer, completing an answer about "what", "why", and "how" about natural tendency or natural characteristic through sistematic ways that will be applied in environment and technology. Those activities are known as scientifc activity based on scientifc method[11].

In studying science, students are directed to prove their prediction result by using theory through experiment by using scientifc method. Science education in schools are expected to be able to be a tool for students to study theirself and their environment around, and also a prospect of following development in applying them in daily life, based on scientifc method. Science study focused on direct experience to develop competences in order to the students are able to understand enviroment around through the process of "looking for knowledge" and "acting". This will help students to get a deeper understanding. Therefore, science study in schools should:

a. give experiences to students in order to be competent to do measuring many physical scales.
b. encourage students about the importance of emphirical observation in examining a scientifc statement (hypothesis). This hypothesis is from an observation toward daily occurences needing scientifc provement.

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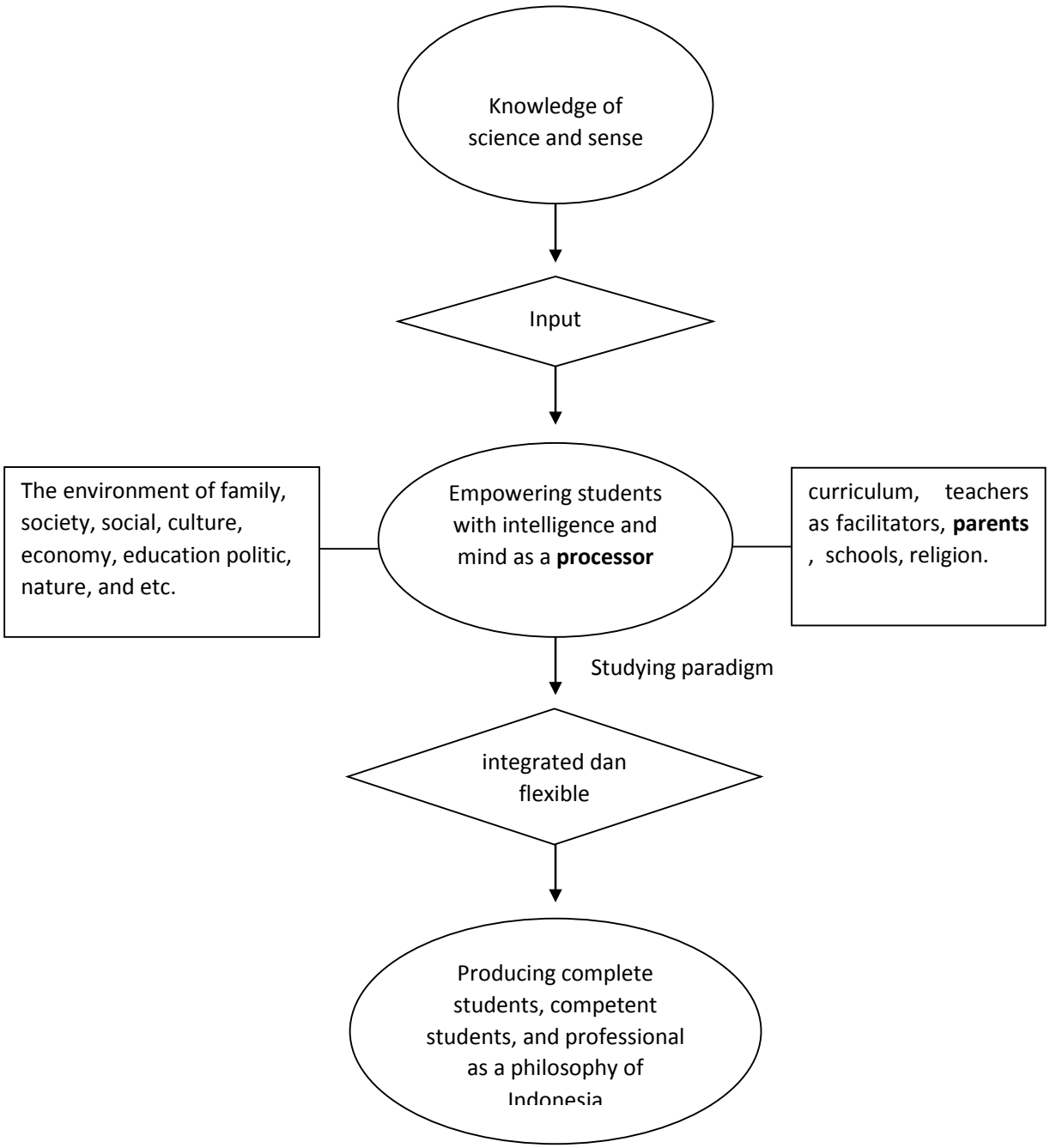
7 Depdiknas. 2003. Standar penilaian buku pelajaran sains. Jakarta.
8 Oemar. 1995. Kurikulum dan pembelajaran. Jakarta: Bumi Aksara.
9 Meier. 2002. Panduan kreatif dan efektif merancang program pendidikan dan pelatihan. (Terjemahan Rahmani Astuti). New York: McGraw-Hill. (Buku asli diterbitkan tahun 2000).
10 David. 1974. Teaching science in elementary and middle schools. America: McKay Company, Inc.
11 Depdiknas. 2007. Panduan pengembangan pembelajaran IPA terpadu SMP atau MTS. Jakarta. www. puskur. Net

c. train to think quantitatively that supports mathematic studying process, that is as an application of mathematics to real problems relating to natural phenomena.

d. introduce technology world through creative activity in an activity of arranging and producing simple tools or an explanation about many tendencies and the potency of science in answering many problems.

8. The solution of science education reformation toward students and teachers



Scheme 1. Positions of students and teachers in a school

Actually a reformation of education begins from out intention and goal to complete an education cohesively. Many factors extremely influencing education developments now when the

case becomes a focus in the development of education. Actually students have a potential coming from theirself or from environment around. Actually, all extremely in f uence student empowering. By the change of curriculum, education in schools doesn't precisely create a good education system but confussion does. If the change of curiculum is followed by professionality and competency had, teachers are not doubted.

teacher management ⟶ The quality of teachers increase ⟶ the quality of teacher works increase ⟶ the quality of students increase

a way to think relevantly with a purpose to education importance without private or instutional unsures in order to those students become the main focus needing to be noticed. Empowering students to study from their experience "study how to study" to problems occured with the result that the way of intelligent and mind can function as usual. In empowering s teacher position is only as a facilitator in study process in schools, so demanding students to construct their knowledge to be more impressing but still follow the procedures of science study delivered by teachers. Science study is an active process and extremely in f uenced by what will be studied by students. From this perspective the result of lecturing doesn't depend on what teachers explain, but is in f uenced by interaction result among some information gotten by by them from the previous environment around the students with the response of students to information given by teachers. Science is received by students through the f ve sense that then is interpreted in mind and intelligence of students, teachers as facilitators by harmonizing aspects around like society, parents, social culture, religion and other environment to be a complete union whithout discriminating one of those aspects because their involvement extremely determines the succes of student study and teacher's role completely. Ignoring one of those aspects will make a continual fault, in other words meeting point of attainment will not be realized. Because in participation to create students that completely competent, professional, like our country phylosophy and also teachers that are really competent and professional in their f eld it is necessary to notice a reality show and teaching paradigm becomes studying paradigm that the characteristic is integrated (unite) and f exible (graciousness).

9. Closing

Fixing the quality of science education in Indonesia not only needs curiculum changes but also more. The changes of curriculum have to be followed by the change of paradigm in science study, that is the paradigm of teaching to the paradigm of studying. By using the paradigm of studying, students are guided to reconstruct knowledge needing to be mastered. The science educatin have to be meaningful for them. It means that students in science study have to be able to the importance of science for them to face their future. Therefore, students need to be faced to real and contextual problems or in other words, the problem can be imagined by students and begun from what they have and know.

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HOLISTIC-INTEGRALISTIC TEACHER

"The Necessity And The Needs For Multiple Intelligences-Based Learning Process In The Islamic Elementary School"

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ABSTRACT

Howard Gardner's notion of multiple intelligences has brought major changes to the way people in the world view the key to success in life. The view of multiple intelligences offers a richer description of the capabilities and the potential success of a child rather than raw IQ. This view also has a major impact on the rearrangements purpose, process and output for the provision of education, including in Islamic educational institutions in the elementary school level. As a result, many efforts, programs, and activities are compiled by the Islamic elementary school managers to realize the implementation of multiple intelligences-based education. Unfortunately, such a teacher profile which is suitable for the implementation of multiple intelligences-based educations has not been studied in depth. Therefore, this research seeks to explore the concept of teacher in Islamic perspective which is relevant to multiple intelligences-based education. Through literary study with post-structuralism hermeneutic approach, this research seeks to offer an alternative idea about the concept of teacher for learning multiple intelligences-based that is unearthed from the meaning of creativity to the development of classical Islamic concept of the teacher, i.e. mu'allim, murabbiy, mursyid, and mu'addib. The result of this research concludes that an expected professional teacher for Islamic education in Islamic elementary school which is relevant to the Islamic school with multiple intelligence orientation is holistic-integralistic teacher. The teacher has four competencies: intellectual and research capacity, spiritual capacity, moral and ethical capacity, and emotional capacity

Keywords: *multiple intelligences, professional teacher, Islamic Elementary School*

A. INTRODUCTION

The emergence of the theory of multiple intelligences has wide implications on the beliefs and perspectives of people in the world on how to achieve success in life. From this concept, there is a view that to achieve success, there are many ways that can be taken and a lot of different capabilities that can help to achieve that success. IQ tests are not the only determinant of the success in life. In a book entitled *Frames of Mind*, published in 1983, Howard Gardner, the originator of the theory of multiple intelligences, reveals that not only one kind of monolithic intelligence (intelligence quotient) that are important for success in life, but there is a wide spectrum of intelligence (Goleman, 1997: 50-51). Intelligence comes in the form of eight skills: verbal, mathematical, spatial, body-kinesthetic, musical, intrapersonal, interpersonal, and naturalist skill (Santrock, 2007:140-141).

The theory of multiple intelligences has stimulated people to think broadly about what

constitutes a person's intelligence and competence. This theory motivates teachers to develop a program to teach children in different domains. Therefore, as the impact, there will emerge technologies to facilitate intelligence area of the learners, such as the computer development for learning, the use of *touchscreen* display, the development of *Musical Instrument Digital Interface* (MIDI), the use of the *National Geographic Online*, and so on. In addition, it also develops a wide range of learning strategies for each of the eight skills above (Santrock, 2007:146). Moreover, multiple intelligences-based curriculum has been prepared in thousands of schools. Armstrong points out that in thae curriculum, students take a special feld in various subjects involving the eighth intelligences for the real-world skills (e.g. course architecture, the art of planting, the composition of music, yoga, rock collection, or publication) (Armstrong, 2011:178-179).

However, there are some things that are rarely touched in the discussion of the implementation of multiple intelligences in the educational practices in elementary schools and Islamic elementary schools. One of them is about the appropriate profle of Islamic elementary school teacher to emerge the multiple intelligences-based class. It is important to study more depth because the role and the function are very central in the educational process. Saiful Anam discloses that a teacher is the generator that drives teacher's teaching activities. Teacher has a very strategic role in the achievement of educational goals, and becomes one of the determinant factors that determine the level of success of a child in the process of transformation of science and technology, as well as ethical and moral internalization (Anam, 2005:337). The teacher is the mission of the waves in the feld of education as well as an important factor in creating a qualifed and effcient education system (Harsono and Susilo, 2010:24).

In addition, teacher is the central fgure in the feld of education, especially in the Teaching-Learning Process (PBM). Thus, this profession is a special job referred in Article 7 of Law No. 14 Year 2005 about Teacher and Lecturer. It is said that the profession of teacher and lecturer is a special feld of work carried out on the basis of having academic qualifcations and educational background in their respective sectors. Teacher, as a professional trainer is also required to have the qualifcation, competency and certifcation (Harsono and Susilo, 2010:24). Therefore, there is no doubt that the assessment of the teacher profle for multiple intelligences class is very urgent and necessary.

Based on some of the arguments, this research explores a number of classical Islamic concepts of the teacher and the relevance to the theory of multiple intelligences. Some of the problem statements are developed in this research includes: frst, how is the teacher profle for multiple intelligences class? Second, how is the basic concept of professional teacher in the classical Islamic concept? Third, how is the relevance of the concept of professional teacher in the basic education of Islam with the multiple intelligences class? This research is expected to fnd the basic concept of professional profle of Islamic elementary school teacher that is consistent with the demand of the multiple intelligences class.

B. METHOD OF RESEARCH

The method of this research applies the literary research (literature). The approach uses post-positivistic paradigm (qualitative). The analysis uses content analysis technique with post-structuralism hermeneutic approach. It means, this research is directed and conducted by developing the meaning of creativity from classical concepts such as *mu'allim, murabbiy, murshid,* and *mu'addib*. The analysis process, the text or something spoken is deconstructed from the conventional understanding to a new understanding (Muhadjir, 2011:317-318).

Data sources used in this research are books or articles related to the topics in this study. The data of this research come from the thought of the Islamic scholars about the various terms associated with teacher, such as *mu'allim, murabbiy, murshid,* and*, mu'addib* which is contained in various writings both in books, articles, and journals. Besides that, it also learns about the Islamic education scholars thought on professional development of Islamic education teacher.

To perform this study, the procedure of the research, researcher collects the concept of teacher that includes *mu'allim, murabbiy, mursyid,* and*, mu'addib* from a variety of relevant library materials. Start from this first step, it is followed by an intertextual analysis interpretively which is sought to bring *meaning of creativity* of the concept of Islamic education teacher who have been there at the top. After that, the researchers combines the concept of a professional teacher who emerges from the concept *mu'allim, murabbiy, mursyid,* and*, mu'addib* to develop the professionalism of teacher in Islamic education in order to obtain a strong and firm foundation. Lastly, the writer makes abstraction and inference of the concept and its development in a professional teacher of Islamic education. Thus, it can be obtained operational definition of the concept and its development in a professional teacher of Islamic education that can be applied in the practical realm.

C. FINDING AND DISCUSSION

1. Teacher's Profile for Multiple Intelligences Class

The emergence of the theory of multiple intelligences is a new chapter in the education field. This theory explicitly rejects that intellectual intelligence (IQ) is the only factor determining the success of a person's life. Howard Gardner, in his latest book Multiple Intelligences: New Horizon, states that intelligence is bio-psychological construction (Gardner, 2013:49). In his book Frames of Mind (1983), he states that it is not just one kind of monolithic intelligences (intelligence quotient) that is important for success in life, but there is a wide spectrum of intelligence (Goleman, 1997:50-51). Intelligence comes in the form of eight skills: verbal, mathematical, spatial, body-kinesthetic, musical, intrapersonal, interpersonal, and naturalist skill (Santrock, 2007:140-141).

Briefy, each of these skills is elaborated as below (Santrock, 2007:140):

a. Verbal skills: the ability to think in words and to use language to express meaning (author, journalist, speaker).
b. Math skill: the ability to solve mathematical operations (scientists, engineers, accountants).
c. Spatial ability: the ability to think three-dimensional (architects, artists, sailors).
d. Body-kinesthetic skill: the ability to manipulate objects and smart in physical things (surgeons, craftsmen, dancers, athletes).
e. Musical skill: sensitive to the tone, melody, rhythm, and sound (composers, musicians, and sensitive listeners).
f. Intrapersonal skill: the ability to understand themselves and organize their life effectively (theologians, psychologists).
g. Interpersonal skills: the ability to understand and interact effectively with others (exemplary teachers, mental health professionals).
h. Naturalist skill: the ability to observe patterns in the nature and understand natural systems and man-made systems (farmers, botanists, ecologists, soil experts).
i. Existential intelligence: the intelligence to reflect on the most fundamental questions of existence (Gardner, 2013:35), or the ability to put oneself by paying attention to the achievements furthest in the cosmos and the related ability to put oneself by observing patterns in the existential self human and profound experiences (Armstrong, 2013:195).

Spectrum Project is an innovative business conducted by Gardner to test the eight intelligences. Spectrum Project begins with the basic idea that every student has a potential to develop strengths in one or two areas (Santrock, 2007:141). It gives context to see more clearly the strengths and weaknesses of children. As Santrock describes the description below:

> What does the Spectrum Class look like? This class has a lot of materials that can stimulate a variety of intelligences. However, teacher does not try to stimulate intelligence directly by grouping similar activities that are labeled 'spatial', 'verbal', and so on. Teachers use a combination of materials related to the intelligence domain. For example, naturalist students explore and compare the biological specimen, which does not only sense the ability to train students but also a logical analytical capability. In the area of storytelling, the students create an interesting imaginative story and design the plots. Thus, it encourages students to use the linguistic, dramatic, and imaginative ability. In group structuring, for example, students can construct their own models of class and organize photos of students and teacher in the classroom. This area stimulates both spatial and personal skill. Overall, Spectrum class has 12 areas designed to train and improve the multiple intelligences of the students (Santrock, 2007:141).

According to Landa (2000), as cited by Santrock, he believes that the multiple intelligences approach is the best way to teach children because children have different abilities. According to him, this new approach has brought great changes to the role of the teacher. Teacher no longer stands in front of the class and teach the students. By this approach, teacher is the facilitator rather than a commander when the students learn in different learning centers associated with different intelligences. The students participate in cooperative learning groups in the center. The learning center provides an opportunity for them to develop their interpersonal intelligence (Santrock, 2007:133).

In addition, students also use body-kinesthetic intelligence to prepare the letter shapes as they learn to write. They also use the intelligence to learn pronouncing vowels when they learn, and learn to pronounce letters when they write. Meanwhile, intrapersonal intelligence is the type of intelligence which is most widely ignored in the traditional classroom. In the multiple intelligences class, the students complete their own self-evaluation sheets after they complete the task in a few centers of learning. Students also make (a portfolio where they record the results of their work so that they can see the progress. Similarly, the implementation of multiple intelligences approach is optimal, and then it also needs the awareness of the parents or the guardian of the students. Therefore, it is also needed parental education called "The Parent-Teacher Connection" (Santrock, 2007:133).

Armstrong also states that in the multiple intelligences curriculum, students take a special feld in a variety of subjects involving the eighth intelligence for the real-world skills (e.g. course architecture, the art of planting, the composition of music, yoga, rock collection, or publication) (Armstrong, 2011:178-179).

From the explanation above, it can be concluded that the multiple intelligences as a new learning approach in elementary school has brought a lot of changes in learning activities and classroom management. Teacher is no longer a central fgure who dominates the information and learning resources. Students are no longer subjects who receive the information and knowledge provided by the teacher. Teacher is the facilitator and generator that assists the students in learning. Students actively construct their own knowledge. The success of learning is not only judged on one aspect, called logical-mathematical intelligence, but it is also assessed from various aspects, such as

linguistics or language, spatial or visual, kinesthetic or gestures, musical or rhythm, intrapersonal, interpersonal, and naturalist or nature. Thus, essentially, all students have a unique and individual intelligence. Therefore, each of the unique potential of the students needs to be appreciated and developed in accordance with the uniqueness of each student.

2. The Meaning of *Mu'allim, Murabbiy, Mursyid, and Mu'addib* in Islamic Education

This discussion will develop a meaning of creativity of professional teacher of classical concepts which have been used in Islamic education: *mu'allim, murabbiy, mursyid*, and *mu'addib.* In the two main sources of Islam, Al-Quran and Al-Hadith, the terms are explained from the root word as follows:

> *And He taught Adam the names - all of them. Then He showed them to the angels and said, "Inform Me of the names of these, if you are truthful."* (QS. Al-Baqarah:31)
>
> *And lower to them the wing of humility out of mercy and say, "My Lord, have mercy upon them as they brought me up [when I was] small."* (QS. Al-Israa':24).
>
> *There shall be no compulsion in [acceptance of] the religion. The right course has become clear from the wrong. So whoever disbelieves in Taghut and believes in Allah has grasped the most trustworthy handhold with no break in it. And Allah is Hearing and Knowing.* (QS. Al-Baqarah:256).
>
> *It has been told to us, Muhammad ibn Muqatil has told us, 'Abdullah had preached to us, Salih bin Hayyi said that there was a man from al-Khurasan told asy-Sya'biy, Abu Burdah has told me from Abu Musa Al-Asy'ariy radliallahu' anhu said, the Prophet Sallallaahu 'Alaihi Wasallam said: If someone educated a female slave and taught a knowledge, then he freed her and married to her, he would get two rewards. And if someone believes in Isa 'Alaihis Salam and believes me, it would be two rewards for him. And a slave (man) when he was devoted to his Lord and obey his master, he would get two rewards.*(Narrated by Bukhari No. 3190; Sunan Abi Dawud No. 4481, Musnad Ahmad No. 18777, Sunan an-Nasa'iy No.3292, and Sunan at-Tirmidziy No. 1035).[1]

From the explanation above, it can be revealed that a professional teacher here actually can be termed as holistic-integralistic teacher. The root word mu'allim means that a teacher is required to explain the nature of science he taught and explain the theoretical and practical dimension and then try to awaken students to practice it. Thus, the figure of the teacher, at the same time, is required to transfer knowledge and implement the process of internalization and amaliah (implementation) (Muhaimin Mudjia Rahardjo (ed.), 2006:101).

Furthermore, from the term murabbiy, a teacher has a task to educate and prepare students in order to be creative, also to set and maintain their creation not to be disastrous for themselves, society, and the natural surroundings (Muhaimin Rahardjo (ed.), 2006: 102-103). This is based on the basic view that God, as rabb al-'alam and rab al-nas, creates, organizes, and maintains everything in it, including human nature. Mankind, as His vicegerent (QS.Al-Baqarah: 30; QS. Al-An `am: 165) is ordered to develop their creativity to create (Surah Hud: 61), organize, and

1 Narrated by Bukhari No. 3190, the quality of this hadith is authentic both *sanad* and *matan*. This is also corroborated by other authentic hadiths from another chain of narration that expresses the same thing on Sunan Abi Dawud No. 4481, Musnad Ahmad No. 18777, Sunan an-Nasa'iy No.3292, and Sunan at-Tirdziy No. 1035. See the complete information in Soltanera, *CD of Enscyclopedia Hadith Kitab 9 Imams* (Lidwa Pustaka, 2010-2011). This programm is the translation project of the original software Kitab Kutubut Tis'ah, it is CD Mausu'ah Hadis Syarif Versi 2.00, Dar us Salam Publication, Inc, 1991-1997.

preserve nature and its contents (Djumransyah and Amrullah, 2007:36-37).

Meanwhile, the term of mursyid is understood that a teacher (mursyid) tries to pass on the appreciation (trans-internalization) or the character and personality of the students, either in the form of worship ethos, work ethic, ethos of learning, or all-round dedication which is Lillahi Ta'ala (i.e. because sincerity solely to expect the pleasure of Allah SWT). In other word, the teacher is an exemplary fgure and role model for their students as well as consultants (Muhaimin Rahardjo (ed.), 2006:104-105).

The last, the terms mu'addib means that the teacher is ethical person who has a role and a function to build civilization (Muhaimin Mudjia Rahardjo (ed.), 2006:1045). According to Djumransjah and Amrullah explanation, the teacher in the context of understanding mu'addib must be able to master and practice the knowledge and be able to teach and provide awareness based on civilization (Djumransjah and Amrullah, 2005:36-37).

From the explanation above, it can be concluded that holistic-integralistic teacher is a person who has intellectual and research capacity, the spiritual capacity, moral and ethical capacity, and emotional capacity. The intellectual capacity is manifestation and born from the understanding of the concept mu'allim. The spiritual capacity is manifestation and born from the understanding of the concept of mursyid. Moral and ethical capacity is manifestation and understanding of the concepts of muaddib and murabby. Meanwhile, the capacity to control emotion is the concept of mu'addib. The detailed descriptions about each of these capacities are explained more in the next segment.

3. Holistic-Integralistic Teacher as the Concept of Islamic Elementary School Educator of Multiple Intelligences-Based Class

The nature of holistic-integralistic teacher is realization of noble person (QS.At-Tin: 4), intact, and has many advantages more than others (Surah Al-Israa ': 70). He is a person who is intentionally able to care for an individual or some individual, so that they can grow and succeed in life. Muhammad and the other Messangers are the example of the holistic-integralistic teacher. However, Moh. Slamet Untung says that the frst educator (as Muslims believe in) is Allah, while the Messenger is the perfect man, insan kamil, chosen by God to convey revelation through guidance and education (Untung, 2005:52-53).

As if it is decomposed further, a holistic-integralistic teacher as professional teachers in Islamic education has a number of components as shown in Figure 1:

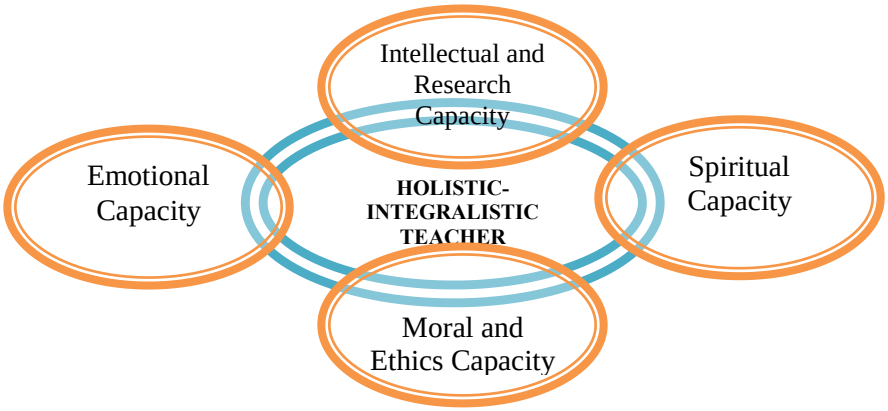

Figure 1. The characteristics of Holistic-Integralistic Teacher as a Professional Teacher in Islamic Education

Below is the explanation of the chart in Figure 1 above. *First*, a holistic-integralistic teacher has the intellectual and research capacity. Thus, a professional teacher must have mastery of the science of knowledge both in terms of philosophical, theoretical and practical aspects. In addition, he is also capable of being a mediator and facilitator for students to conduct more research, in laboratory experiments, problem solving for social problems and so on. Hence, the educational process he created can produce positive values in the form of an empirical-rational, objective-empirical, object-mathematical, and professional attitude (Muhaimin Mudjia Rahardjo (ed.), 2006:104).

Second, a professional teacher has a spiritual capacity. Thus, the teacher is able to have a religious, work, and learning ethos, and also dedication. In other word, the teacher carries out the profession with full of love, appreciation, passion, and dedication to the profession organization, the institution, the nation and the country. It is not just worldly happiness, but also the Hereafter importance (Muhaimin Mudjia Rahardjo (ed.), 2006:104-105).

Third, a professional teacher has moral and ethical capacity. It means, a professional teacher is a teacher who is able to become central of self-identification of the students. With his presence, the students will be infected by trans-internalization (appreciation) character and personality of the teacher (Muhaimin in Mudjia Rahardjo (ed.), 2006:105). In addition, ethical and noble character is the basis for the implementation of roles and functions in development progress of civilization through education, both in physical and spiritual dimension. Fourth, a professional teacher has emotional capacity. It means that a professional teacher is a generator for the process of internalization of values, knowledge, attitude, and skill of the students. He should be able to be a motivator for the implementation of the values that have been taught to be applied in the empirical realm (Muhaimin Mudjia Rahardjo (ed.), 2006:103).

The components of a holistic-integralistic teacher consist of intellectual and research capacity, the spiritual capacity, moral and ethical capacity, and emotional capacity which are relevant and appropriate to the needs of teacher profile for learning process in the multiple intelligences-oriented elementary schools. The relevance can be described as below:

First, intellectual and research capacity has relevance to the teacher profile of multiple intelligences class. This is because the teacher in the classroom must be able to accommodate multiple intelligences and provide stimulus to develop linguistic or language, logical or mathematical, spatial or even visual intelligence. Based on Armstrong's explanation, teacher in the classroom who implements the theory of multiple intelligences needs to find the way to give students a hint, not only through the spoken word, but through a picture or graphical symbols (spatial), behavior and physical gesture (body-kinesthetic), musical phrases (musical), logical patterns (logical-mathematical), social signals (interpersonal), emotions (intrapersonal), and living creatures (naturalist) (Armstrong, 2013:121).

Second, the spiritual capacity has relevance to the development of intrapersonal intelligence efforts. This is based on the new intelligence found by Gardner. It is existential intelligence. Nonetheless, according to Gardner, this intelligence is still not fully placed on the ninth position of the eight types of intelligence that have been found previously. The appearance of the candidate is based on the intelligence of the human tendency to reflect on the most fundamental question of existence (Gardner, 2013:35). Here, the spiritual capacity has an important role in the development of the new intelligence which is found by Garder.

Third is the moral and ethical capacity. This capacity is demonstrated in the figure of the teacher who is able to become central of self-identification for the students. With his presence, the

students will be infected by trans-internalization (appreciation) character and personality of the teacher. In the multiple intelligences class, the teacher which is able to be central of the students' self-identification can help in activating their intelligence. Arsmstrong, in a segment "Activators and Deactivators Intelligence" taken from *Multiple Intelligences in the Classroom*, states that the students often experience the 'turning point' in the development of their talents and abilities. It occurs at any age during the period of life, although it usually occurs in early childhood. On the other, Armstrong reinforces that the profile of teacher's intelligences influences their teaching approaches in the classroom. Furthermore, it will open the gates for a range of activities that can help teacher develop the neglected intelligence, activate retarded or crippled intelligence, and bring the development intelligences to a higher level of proficiency (Armstrong, 2013:29 -31).

Fourth is the emotional capacity. This skill supports the creation of instructional strategy, atmosphere, and classroom management of multiple intelligences-based class in the following points. First, the teacher must be able to create a learning environment where individual needs (students) are identified and considered in all day. The teacher should provide a comfortable and safe environment, and does not need to make a rule of discipline that sometimes even spoils the atmosphere of the class itself (Arsmstrong, 2013:127). In other side, Armstrong also describes in the segment 'The teaching strategies of interpersonal intelligence'. He points out that all children have different interpersonal one level or another. Every teacher should be aware of the teaching approaches that combine interaction with and among the people (Armstrong, 2013: 127). In this interaction, an awaited teacher in multiple intelligence class is a person who has emotional skill. It means that the interaction of humanist and educational learning are created if the teacher has a good emotional skill.

D. CLOSING

From the elaboration above, it can be concluded that multiple intelligences as a new learning approach in elementary school has brought a lot of changes in the learning activities and classroom management. The teacher is no longer a central figure who dominates the information and learning resources, but the role changes as a facilitator and generator. Students are no longer subjects who receive the information and knowledge provided by the teacher, but the students actively construct their own knowledge. Each student has all the intelligences. The intelligences are logical-mathematical, linguistic or language, spatial or visual, kinesthetic or body movement, or rhythm musical, intrapersonal, interpersonal, naturalist or nature, and existential intelligence. Many students can develop each intelligence to an adequate level of competence. Meanwhile, intelligences usually work together in complex ways. There are many ways to be intelligent within every category.

Second, a holistic-integralistic teacher is a professional figure in Islamic education in Islamic elementary school which is built from four main characteristics which are intact and interrelated, including intellectual and research capacity, spiritual capacity, moral and ethical capacity, and emotional capacity.

Third, the relevance of the concept of holistic-integralistic teacher and the necessity of teacher profile for teaching in multiple intelligences-based class of Islamic elementary school lies in some of the followings: intellectual and research capacity which is able to accommodate and provide stimulus to develop linguistic or language intelligence, logical or mathematical intelligence, even or visual spatial intelligence; spiritual capacity which has an important role in the development of existential intelligence; moral and ethical capacity which can help in activating the intelligence

of the students; and emotional capacity which helps to create humanist and educative learning interaction in the multiple intelligences class.

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METAPHORICAL ITEMS ARE QUITE NECESSARY TO LEARN

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Metaphorical forms of speech happened because the symbols are still very limited, while the objects that are surrounding human beings in the world are unlimited. The most common types of metaphors are live and dead metaphors. It was said by Lakoff (1980) that "A common definition of a metaphor can be described as a comparison that shows how two things that are not alike in most ways are similar in another important way".[1] They explain how a metaphor is simply understanding and experiencing one kind of thing in terms of another.

A.Introducing

A metaphor is one of figurative languages that is created by human creative power in applying sense, and through the creativities of the language, one gives new sense to the symbols of the words (referenes) that have already been existed. It mush be understood that the metaphorical forms of speech happened because the symbols are still very limited, while the objects that are surrounding human beings are unlimited. One of the most prominent examples of a metaphor in English literature is the All the world's a stage monologue from As You Like It. A common definition of a metaphor can be described as a comparison that shows how two things that are not alike in most ways are similar in another important way. Newmark (1988) said: "The puspose of metaphor is basically twofold: its referensial purpose is to describe a mental process or state, a concept, a person, an object, a quality or an action more comprehensively and concisely than is possible in literal or physical language".[2] its pragmatic purpose, which is simultaneous, is to appeal to the senses, to interest, to clarify 'graphically', to please, to delight, to surprise.

B. Metaphors

1. The Conseptual of Metaphor

Metaphor is the concept of understanding one thing in terms of another. Generally, one knows that "a metaphor is a figure of speech that describes a subject by asserting that it is, on some point of comparison, the same as another otherwise unrelated object"[3].

There are many explanations of how metaphors work but a common idea is that metaphor is somewhat like simile, in that it involves the identification of resemblances, but that metaphor goes further by causing a transference, where properties are transfered from one concept to another. The two concepts involved in a metaphor are...the described concept...is often called the target

1 Lakoff, George &. Johnson, Mark 1980. *Metaphors We Live By* . Chicago & London: The University of Chicago Press. p.7.

2 Newmark. 1988. *A Textbook of Translation.* Singapore: Prentice Hall International (UK) Ltd.p.104

3 http://en.wikipedia.org/wiki/Metaphor

domain,...and the comparison concept or the analogy...is called the source domain. Lakoff and Johnson (1980) greatly contributed to establishing the importance of conceptual metaphor as a framework for thinking in language. In recent years many scholars have investigated the original ways in which writers use novel metaphors and question the fundamental frameworks of thinking implicit in conceptual metaphors.

2. Grammatical structure of a metaphor

Each metaphor has always a complex grammatical structure

a. *The syntactic structure of a metaphor is able to be in the form of a sentence, clause, or phrase.*

b. *In the basic structure of the metaphor, there are always two terms, namely 'topic' and 'vehicle'.*

c. *The notional classes of metaphor included four image projections. They are:*

** an abstract with the concrete*

** something that is not animate with the inanimate,*

**something about the human characteristics to nonhuman, and*

** one of the five senses with something else*

2. There are four classes of metaphor, they are:

- *1).The **Concretive Metaphor**, which attributes concreteness or physical existence to an abstraction: 'a vicious circle', 'room of negotiation'.*
- *2).The **Animistic Metaphor**, which attributes animate Scharacteristics to the inanimate: 'an angry sky', 'the shoulder of the hill'.*
- *3).The **Humanizing ('Anthropomorphic') Metaphor**, which attributes characteristics of humanity to what is not human: 'This friendly river', 'laughing valleys'.*
- *4).The **Synaesthetic Metaphor**, which transfers meaning from one domain of sensory perception to an other: 'dull sound', 'loud perfume' (Leech, 1969)[4].*

In this case, each metaphor must be in one of the classes of metaphor, and other metaphors can be in other classes of it. The class of metaphor depends on relationship of its tenor and vehicle.

3. *The Position of Metaphor*

Metaphor is in the highest level among the figure of speech (Metaphor, Metonymy, Synecdoche, Irony). Such as it is described by Daniel (2002)[5]. The position of metaphor can be described as the following tables

Table 1: The Four 'Master Tropes'

The Four 'Master Tropes'			
Trope	*Basis*	Linguistic Examples	*Intended Meaning*
Metaphor	*Similarity despite difference (explicit in the case of simile)*	*I work at the coal fare*	*I work at the coal fare*

4 Leech, Geoffrey N. 1969. *A Linguistics Guide to English Poetry.* Hong Kong: Longman Group Ltd.p.158.

5 Daniel, Chandler. 2002. *The Basics Semiotics.* London: Routledge.p.136.

Metonymy	*Relatedness through direct association*	*I`m one of the suits*	*I`m one of the managers*
Synecdoche	*Relatedness through categorical hierarchy*	*I hate working here*	*I deal with customers*
Irony	*Inexplicit direct oppocite (more explicit in sarcasm)*	*I love working here*	*I hate working here*

Table 2: Tropes, genres, workviews, and Ideologies.

"Tropes, genres, workviews, and ideologies"[1]			
Trope	*Genre (mode of emplotment)*	Worldview (mode of argument)	*Ideology (mode of ideological implication)*
Metaphor	*romance*	*formism*	*Anarchism*
Metonymy	*comedy*	*organism*	*Conservatism*
Synecdoche	*tragedy*	*mechanism*	*Radicalism*
Irony	*satire*	*contextualism*	*Liberalism*

With the 2 table above, we can see the various systems ofclassi f cation as structurally homologous with one another about the metaphors.

Table 3: The Positions of Metaphor and Metonymy

Metaphor* and *Metonymy
metaphor ! *paradigm !* *similarity !* *substitution !* *selection !*_____ *metonymy* *syntagm* *contiguity* *context* *combination*

This table 3 is the clearest described than the table 1 and 2 above. The phenomena are seldom as tidy as our system of classi f cation. Systems always leak and it is for the individual reader to asses how interpretatively useful the application.

4. "Metaphors assert similarities".

*The aims of similarities are: physical similarities, characteristic similarities, conceptual similarities or cultural similarities. Sterm, Josef, "Metaphor in Context", (*Stern, 2000).[6] *For a metaphor is a figure of speech that describes a subject by asserting that it is, on some point of comparison, the same as another otherwise unrelated object.*

In simpler terms, a metaphor compares two objects/things without using the words "like" or "as". In order to understand the meaning the metaphor is not so easy, becouse we should pay attention the four steps carefully.These are the four parts for having the meaning of a metaphor.

5. A metaphor has four parts, they are

a. *image-the second proposition (figurative), i.e. what is being compared with.*
b. *topic-the first proposition (nonfigurative), i.e. the thing really being talked about.*
c. *point of similarity-found in the comments of both of the proposition involved or the comment of an event proposition which has the image as topic.*
d. *nonfigurative equivalent- when the proposition containing the topic as an event proposition, the comment is the nonfigurative equivalent (Larson, 1984)[7].*

We can not directly to think to the last step for having the meaning of a metaphor. A metaphor is a figure of speech that describes a subject by asserting that it is, on some point of comparison, the same as another otherwise unrelated object. Metaphor is a type of analogy and is closely related to other rhetorical figures of speech that achieve their effects via association, comparison or resemblance including allegory, hyperbole, and simile.

There are main types of metaphors that are often used in our communication. They are live and dead metaphors. Between the two metaphors, the live metaphor is much more expressive. Follow the explanation below:

6. *The Types of Metaphors (**Live and Dead Metaphors*****).**

a. *"A live metaphor is one which is understood only after paying special attention to the comparison which is being made*" (*Larson* 1984).[8] *The live metaphors are constructed on the spot by the author or speaker to teach or illustrate.* Example, *He is* ***a rock****. It has the tenor of 'He', and the vehicle of* ***'a rock'*** *as a metaphorical term. In the relationship among the two terms, there is a point of similarity, such as the character of 'hard'.*

b. Dead Metaphor

- *"Dead metaphors are those which are a part of the idiomatic constructions of the lexicon of the language". [9]We can pay attention when a dead metaphor is used, the person listening or reading does not thing about the primary sense of the words, but only about the idiomatic sense directly. An idiom is a dead metaphor.One can understand the dead metaphor easily, for the dead metaphor is one which is understood directly without paying attention to the comparison. Example: 'the leg of table'.*

7. *In general, there are five ways that metaphors may be translated*

a. *The metaphor may be kept if the receptor language permits (that is, if it sounds natural and is understood correctly by the readers)*

6 Stern, Josef. 2000. *Metaphor in Context*. Hongkong: Massachusetts Institute of Technology.p.147.

7 Larson, L. Mildred. 1980. "*Meaning Based Translation", (England: University Press of America.p.147.*

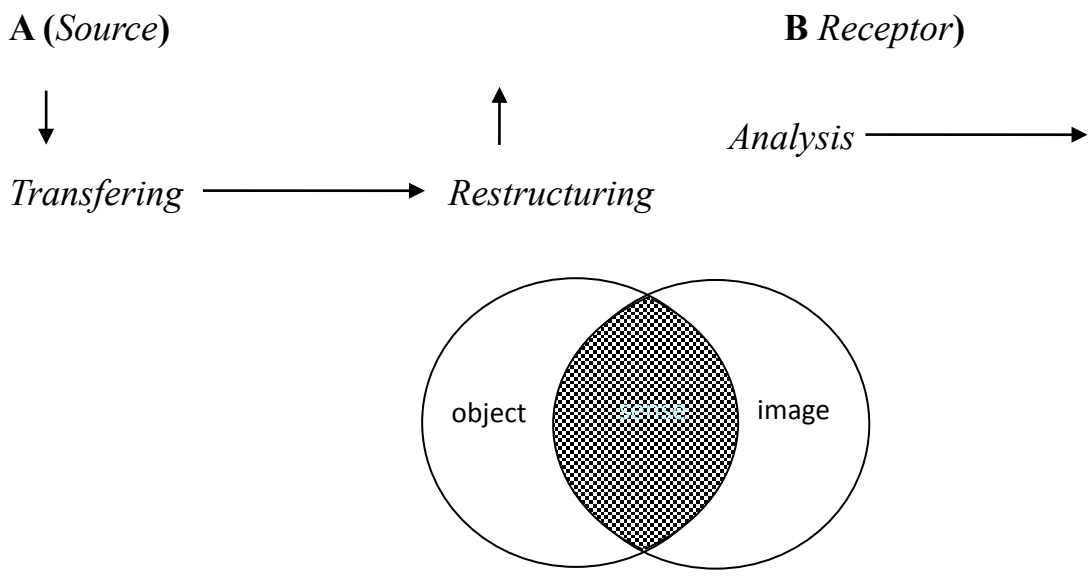
8 Ibid. 249.

9 Ibid. 250.

b. *A metaphor may be translated (as a simile, adding 'like', or 'as') by shifting*
c. *A metaphor of the receptor language which has the same meaning may be substituted;*
d. *The metaphor may be kept and the meaning explained (that is, the topic and/or point of similarity may be added); and*
e. *The meaning of the metaphor may be translated without keeping the metaphorical imagery.*

Some theorists have suggested that metaphors are not merely stylistic, but that they are cognitively important as well. In Metaphors We Live By George Lakoff and Mark Johnson argue that metaphors are pervasive in everyday life, not just in language, but also in thought and action. A common de f nition of a metaphor can be described as a comparison that shows how two things that are not alike in most ways are similar in another important way. They explain how a metaphor is simply understanding and experiencing one kind of thing in terms of another. The authors call this concept a "conduit metaphor". By this they meant that a speaker can put ideas or objects into words or containers, and then send them along a channel, or conduit, to a listener who takes that idea or object out of the container and makes meaning of it. In other words, communication is something that ideas go into. The container is separate from the ideas themselves. Lakoff and Johnson (1980) give several examples of daily metaphors we use, such as "argument is war" and "time is money". [10]Metaphors are widely used in context to describe personal meaning. The authors also suggest that communication can be viewed as a machine: "Communication is not what one does with the machine, but is the machine itself." (Johnson, Lakoff, 1980).[9]

Concerning to translation, Brislin (1976) said: "*Translation is the general term refering to the transfer of thoughts and ideas from one language (source) to another (target)".*[11] Nida &Taber (1969: 33) described the three stages process of translation in as the following picture 4.



Picture 1: The Process of Translation by Nida & Taber (1969).[12]

1. Analysis, in which the surface structure (the message as given in source language is analized in

10 Lakoff, George & Johnson, Mark. 1980. *Metaphors We Live By.* Chicago & London: The University of Chicago Press.p. 18.
11 Brislin, Richard W. (ed). 1976. *Translation Applications and Research.* New York: Gardener Press, Inc. P.1.
12 Nida, Eugene and Charles, R. Taber. 1969. *The Theory and Practice of Translation*. Leiden: Published for the United Bible Societies.p.33.

terms of (a) the grammatical relationship and (b) the meanings of the words and combinations of words,

2. *Yransfer,in which the analyzedmaterial is transferred in the mind of the traslator from source language to recepter language, and*
3. *restructuring, in which the translated material is restructured in order to make the final message fully exeptable in the receptor language.*

The process of translation, then can be used to translate a metaphor with the special treatment of translation of metaphor. as described below:

Stern, Josef. 2000. *Metaphor in Context*. Hongkong: Massachusetts Institute of Teknology.p.147.

. Larson, L. Mildred. 1980. "*Meaning Based Translation", (England: University Press of America.p.147.*

The translation of metaphor

Object what is described or quali f ed by the metaphor

Sense : the literal meaning of the metaphor; the resemblance or the semantic area overlapping object and emage, usually this consists of more than one sense component – otherwise literal language would do

Image : the picture conjured up by the metaphor, which may be universal,

(Newmark:1980).[13]

C. CONCLUSION:

It is necessary for linguists to understand well about metaphors. A metaphor is the imaginative use of a word or phrase to describe somebody or something as an other object in order to show that they have the same qualities and to make the description more forceful. It is clear enough that **metaphor is the concept of understanding one thing in terms of another. A metaphor has grammatical structures, classes and types of metaphor. Each has temor and vehicle, it has non-literal meaning.**

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IMPROVING THE STUDENTS' SKILLS IN WRITING DESCRIPTIVE TEXTS THROUGH DIGITAL IMAGES AT THE EIGHTH GRADE OF SMP ALI MAKSUM PONDOK PESANTREN KRAPYAK BANTUL IN THE ACADEMIC YEAR OF 2013/2014

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ABSTRACT

The objective of the research was to improve the students' skills in writing descriptive texts through digital images at the eighth grade of SMP Ali Maksum Krapyak Yogyakarta in the academic year 2013/2014. It consisted of two main actions and one additional action: 1) giving a model of descriptive text and asking the students to list the difficult words, 2) using digital images in the class, and 3) giving rewards and brainstorming to motivate the students.

The research was action research. The members of the research consisted of the researcher, the collaborator, the English teacher, and the students of Grade VIIID. The research was carried out in two cycles. The steps involved reconnaissance, planning, action and observation, and reflection. The data of the research were qualitative in nature supported by quantitative data. The qualitative data were obtained by observing the teaching and learning process and interviewing the English teacher and the students of VIIID. The qualitative data were in the forms of field notes and interview transcripts were analyzed based on the qualitative data analysis. The pre-test and post-test were conducted to gain the quantitative data. A gain score of pre-test and the post-test was used to analyze the quantitative data that were in the forms of students' writing scores.

The findings showed that digital images have three important points. They are practicality, novelty, and clarity. The use of digital images in the research evidently improved the students' skills in writing descriptive texts. The improvements covered: 1) the students consider writing as an easy and interesting lesson, indicated by their enthusiasm to write, 2) students generated their ideas easier into paragraph, 3) and digital images improved the students' skills in writing descriptive texts in terms of grammatical, vocabulary, and sentence structure. The improvement of the students' writing skills can be seen from the result of the gain score. The gain score of the means was 6.65, it could be concluded that there was improvement in the students' skills in writing descriptive texts after the digital images were used in the class.

Keywords: *improving, skills in writing descriptive texts, digital images*

INTRODUCTION

English, as one of the subjects in all the educational levels, is given a greater attention in every educational level since it becomes a compulsory subject needed by the students to face the globalization and free market era. In the School-Based Curriculum, the English lesson especially

writing for junior high schools (SMP/MTs) is aimed to develop the communicative competences in spoken and/or written language to reach the functional level. When the students reach the functional level, they can fulfll their needs like writing the letters, comprehending the procedure texts well, and describing something.

Some of the junior high school students, however, have not reached the functional level well. They still have difficulties in the writing lesson. When the English teacher asked them to write a descriptive text, only a few of them understood the descriptive text. The result of their assignment of writing descriptive text is not satisfying. Some of them still have difficulties in using structure and grammar of the writing of a descriptive text. It can be concluded that the students still have difficulty in writing descriptive texts.

When I observed SMP Ali Maksum Krapyak, Bantul, Yogyakarta, more than half of the students of VIII D in the first semester of 2013/2014 academic year still had difficulties in writing descriptive texts. The major problem that the students faced was how to get an idea and develop it. The problems might be because of the teaching method, the technique, the materials, the media or the combination of them. In order to generate students' active participation in class, teachers must be both communicative and creative. Teachers have to encourage all students to participate actively during the lesson, so that not only some students are actively involved in class activities. Besides, the materials and learning media should be educational, attractive, and up to date.

LITERATURE REVIEW

There are some literature reviews and theoretical background as the description of the theories and relevant definitions related to the research. The theories include the English language teaching and learning, teaching and learning writing, the characteristics of the students of junior high schools, text types in English, and the role of media in teaching and learning process.

Writing is one of the important skills that students need to develop. The ability to write is very important for the academic context, business and personal relation in the global community (Weigle, 2002:1). Writing and speaking are productive skills. It means that the writers and speakers go through producing a language (Harmer, 2007:7). Furthermore, Rivers (1981:291) states that writing is more difficult than speaking as writing is 'communicating into space'. In face-to-face communication, there is little time to think and produce it. The writing process is the stage that the writer goes through in order to produce something in his final written form (Harmer, 2004:11). Still, he states that there are four-steps in the writing process. They are planning, drafting, editing and final draft.

According to Feez and Joyce (1998: 4), a text is any stretch of language which is held together cohesively through meaning. Whether a stretch of language is a text or not has nothing to do with its size or form. It has to do with the meanings of the stretch of language working together as a unified whole. Anderson and Anderson (1997:1) state that texts are divided into two main categories, literature texts and factual texts. According to Anderson and Anderson (1998: 26) a description text describes a particular person, place or thing. Its purpose is to tell about the subject by describing its features without including personal opinions. Description differs from an information report because it describes a specific subject rather than a general group. The description text has three main parts, a general opening statement in the first paragraph, a series of paragraphs about the subject, and a concluding paragraph.

Harmer (2004:177) states that media such as a range of objects, pictures, cards and other things can be used for presenting and manipulating language. It lets the students to be active in all

activities in the class. Vernon (1996) states that there are six kinds of media, drawing or teacher mode drawings, pictures, audio recording, motion picture and TV, real object, simulation, and models, and programmed and computer-assisted instruction. Of all types of media, visual media are more preferable because most people learn more easily by their sight than other sensory perception (Corder, 1966: ix, in Ratnasari, 2010). Digital image is still picture in electronic file format in any form and of any subject including those derived from analog images such as scanned photographs and slides (Kandiuk: 2011). Considering that a digital image is still a picture, I elaborate the definition. A picture is a photograph, drawing, and painting. According to Wright (1989:193), the appropriate picture in a descriptive text is a single object picture. It is because, describing means imagining something or someone focusly. Thus, to describe something or someone, students need a single object. Harmer (2001:134) states that all kinds of pictures can be used in the multiplicity of ways. They are drill, communication games, understanding, ornamentation, prediction and discussion. Harmer (2007:330) also states that pictures can provide stimulation for writing habitual activities. According to Wright (1989:2), specifically, pictures contribute to interest and motivation, a sense of the context of the language, a specific reference point or stimulate.

RESEARCH METHODS

The research is an action research. It focused on the efforts to improve students' skills in writing descriptive texts by using digital images. It is categorized as an action research since there was a self-reflective, critical, systematic approach that was done to identify the problematic situation as a way of improvement and changes in educational practice. McNiff and Whitehead (2006: 7) state that action research is a form of study that enables practitioners to investigate and evaluate their work.

The research data are qualitative and are also supported by the quantitative data. The qualitative data were obtained through interviews and observation. Tests were used to attain the quantitative data. I used pre-test before implementing the actions and post-test after implementing the actions. The scores from pre-test and post-test would be compared to acquire the data. After getting the data, I continued to the next step to analyze the data. Based on Miles & Huberman (1994: 26), there are three steps to analyze the data: reducing data, displaying data, and drawing and verifying conclusions. In addition to that, to analyze the quantitative data which were in the form of students' writing performance task scores, I used a writing rubric adapted from Jacobs et al. in Weigle (2002: 116). The rubric provides four aspects of writing namely content, organization, vocabulary, and language use in which each of them is scaled from 1 to 4. Hence, the maximum score is 16, while the minimum score is 4.

Scoring Rubric for Writing Production
(adapted from Jacobs *et al* ; 1981)

CONTENT	4	Excellent to very good	Knowledgeable, thorough development of thesis, relevant to the topic
	3	Good to average	Some knowledge of subject, limited development of thesis, mostly relevant to topic, but lacks detail
	2	Fair to poor	Limited knowledge of subject, inadequate development of topic
	1	Very poor	Does not show knowledge of subject, not enough to evaluate
ORGANIZATION	4	Excellent to very good	Fluent expression, ideas clearle stated, well-organized, logical sequencing, cohesive
	3	Good to average	Loosely organized but main ideas stand out, limited support, logical but incomplete sequencing
	2	Fair to poor	Non-fuent, ideas confused or disconnected, lacks logical sequencing and development
	1	Very poor	Does not communicate, no organization, not enough to evaluate
VOCABULARY	4	Excellent to very good	Sophisticated range, effective word choice, word form mastery
	3	Good to average	Adequate range, sometimes errors of word choice, usage but meaning not obscured
	2	Fair to poor	Limited range, frequent errors of word choice, usage but meaning confused or obscured
	1	Very poor	Essentially translation, little knowledge of English vocabulary, not enough to evaluate
LANGUAGE USE	4	Excellent to very good	Effective complex constructions, few errors of agreement, tense, number, word order, articles, pronouns and preposition
	3	Good to average	Effective but simple constructions, minor problems in complex constructions, several errors of agreement, tense, number, word order, articles, pronouns and preposition
	2	Fair to poor	Major problems in simple/complex constructions, frequent errors of negation, agreement, tense, number, word order, articles, pronouns and preposition, meaning confused or obscured.
	1	Very poor	Almost no mastery of sentence construction rules, dominated by errors, does not communicative, not enough to evaluate.

RESEARCH PARTICIPANTS

The participants of the research were the English teacher, the students of the VIIID of SMP Ali Maksum Krapyak and me. The English teacher and I were the collaborators of the research, and the students were the object of the research.

The school is an Islamic-Based school. There were many lessons that support Arabic skills. It was inversely proportional to English lesson. The school gave less attention to English. The class had 37 students. They live in an Islamic boarding house near the school. It is about 100 meters from the school. They were in the age of 14 years old and they had attended English lesson since they were at Elementary school.

The class was chosen by the English teacher because almost all of the students in the class still had difficulty in writing, especially in some aspects in writing, like vocabulary, grammatical structure, and how to generate their ideas to write more.

RESEARCH SETTING

The research was held from October to November 2013. The following is the time schedule of the research. The research was conducted in SMP Ali Maksum Krapyak Sewon Bantul. SMP Ali Maksum Krapyak is located in Jl. Cuwiri Komplek Pondok Pesantren Krapyak, Krapyak Panggung Harjo, Sewon, Bantul, Yogyakarta 55011.

FINDINGS

Based on the classroom observation, I presented a vignette which explains the process of English teaching and learning below:

The English Teaching-Learning Process in Class VIIID of SMP Ali Maksum

It has 27 students and all of them are female students. They made a lot of noise before the teacher came, then the teacher greeted the students in English. Later, she asked them to pray together. She asked them who was absent that day. She opened the lesson in Indonesian. She asked them to open the LKS entitles "*Kejar*" page 20. She began to explain about expressions how to ***describe your idol***. I observed that the students made a lot of noise by talking to each other.

Then, the teacher read the expressions; she asked them to repeat after her. Only a number of students paid attention to the teacher's instruction. Most of the students did not give responses to the teacher. Moreover, when the teacher explained the materials many students still made a lot of noises by talking to each other and doing something to disturb other students. However, the teacher did not use any media to make students interested in joining the lesson. Also, the teacher did not make any class discussions in explaining the materials. The students only kept silent while the teacher explained the materials. There were two students who slept in the middle of teaching learning process. If the teacher tried to ask a question to the students, the students gave a few responses to the teacher. When the teacher asked any problem with the material? The students only said "no". Meanwhile, some students still made a lot of noises in the classroom. The teacher only said in Indonesian, ***"coba yang dibelakang tolong perhatikan. Nanti kalo ditanya pada gak tau lagi"*** (Hei you in the back, pay attention to me please. If you don't pay attention to me, you can't answer if I give you a question)"

After the teacher explained the materials, she gave exercises related to the materials. The exercises given by the teacher were taken only from the students' worksheet (LKS). The students were asked to describe some idols in the worksheet (LKS). Then, she prepared the answer column in the whiteboard. She asked the students to write the answers in the whiteboard randomly and then describe it in the book. The students seemed confused on how to describe the idol. It can be seen from the situation and the result of students' work. There were many students asked their friends and cheated their friends' work. Some students got bad mark on their writing task. Then, she asked them to do the other exercises in LKS. She asked them to match the antonym words. The time finished; she asked them to do the other exercises as

From the vignette, it can be implied that the process of English teaching and learning did not run very well. The students were noisy during the lesson. Besides, they also had difficulties in mastering English, especially writing. It can also be seen from the result of the interview done after observing the teaching and learning process. The following are some interview transcripts which show students' difficulties:

R	: "*kesulitannya dimana*?" **(Which part is difficult?)**
S19	: "*Kadang banyak yang sama (cara bacanya) tapi gak tau artinya… gitu*" : **("sometimes, there are some words that have almost the same pronunciation, and I don't understand the meaning")**
R	: "*terus ada lagi ga?*" **(Anything else?)**

S19	: "*Ya banyak*" **("Sure, there's so many")**
R	: "*ya banyaknya apa lagi? Biar saya tahu.* **(Yes I see, what else? Can you mention it? Tell me.")**
S19	: "menyusun kata-katanya gitulah" **(how to arrange the words correctly, something like that)"**
	R: Researcher S: Student (Interview 2, November 25th, 2013)

R	: "*Kesulitannya kira-kira dimana?"* **("Which part is difficult for you?")**
S33	: "*di kosakata, menyusun kalimatnya, tensesnya, ya banyak lagi pokoe.* **("I have difficulties in learning the vocabulary, arranging words, tense, and so many things")**
	R: Researcher S: Student (Interview 3, November 25th, 2013)

R	: *"dari SD sampai sekarang kesulitannya belajar bahasa inggris dimana?"* **"From elementary school till now, what is the difficult in learning English?"**
S5	: *"mmm… apa ya?dari kosakata, terus dari pengucapan, penulisan.. ya banyaak laah."* **("mmm... the vocabulary, then the pronunciation, the process of writing, and the like").**
R	: "*sesulit apa sih menurut kamu*?" **("How difficult is it for you?")**
S5	: *"sulit banget"* **("It's very difficult")**
	R: Researcher S: Student (Interview 4, November 25th, 2013)

I realized that in the first time the action was implemented, there were only a few students were enthusiastic in comprehending the text, but in the next time, there were more students were enthusiastic in comprehending the text. They felt that it was not difficult to comprehend the text if we wanted to try. The students' opinion can be seen in the interview transcript below:

R	: "Oke. *By the way*, kalo nulisnya gimana? Ada kesulitan nggak?" ("okay, by the way, what about the writing process, is there any difficulties?
S13	**:** "*Alhamdulillah* ga terlalu sulit. Lumayan terbantu sama gambarnya bu. **(Alhamdulillah it's not so difficult. The images were helping me enough.)**
R	**: "**Oke, jadi untuk menuangkan ide udah bisa ya?" **(okay, so now, you're already able to generate your idea, aren't you?**
S13	**:** "Iya, bu" **("yes ma'am")**
R	**:** "oiya tadi kamu bilang gambarnya membantu, membantunya gimana tuh?" **(you said that the images were helping you in the writing process, how did they help you?)**
S13	**:** "itu bu, lebih gampang gitu mau nulis apa kan ada yang dilihat, ada bentuknya, dari gambarnya kan bisa ngebayangin juga apa nantinya yang mau ditulis" **(it made me more easy to write because I can see the image with exact visual and shaped. From the images, I also can imagine what will I write.)**

R: Researcher S: Student (Interview 11, November 25nd, 2013)

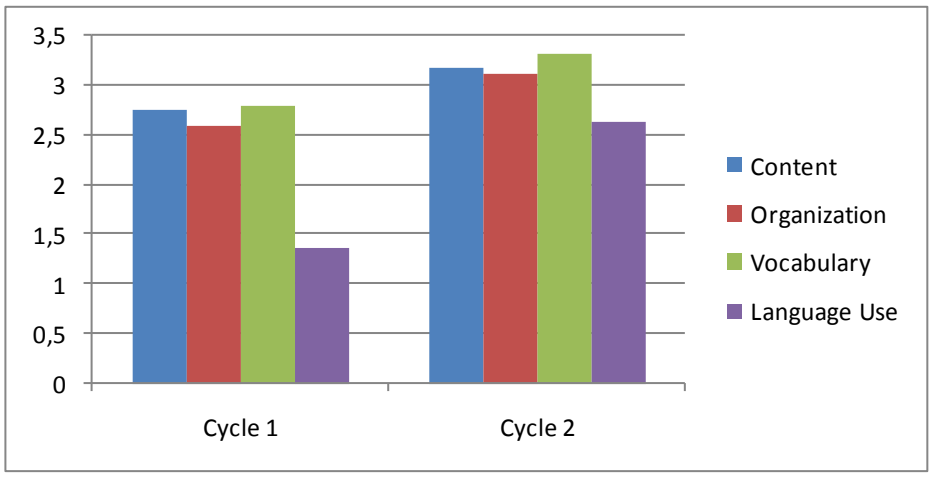
Most of the students enjoyed the material and gave positive responses. They liked to learn English with the new materials which is given by me. I showed the whole improvement of the actions that had been done in every cycle.

The Improvement of each cycle

Cycle	Actions	Meeting 1	Meeting 2	Meeting 3	Meeting 4
1	a. Giving a model of descriptive texts and asking the students to list the difficult words.	NS	S	-	S
	b. Implementing pictures in the class.	S	NS	-	S
	c. Giving rewards to motivate the students.	NS	S	-	S
2	a. Giving modeling texts and asking the students to list the difficult words.	S	S	S	S
	b. Implementing pictures in the class.	S	S	S	S
	c. Giving rewards to motivate the stidents.	S	S	S	S

Note:
NS: not successful S: successful

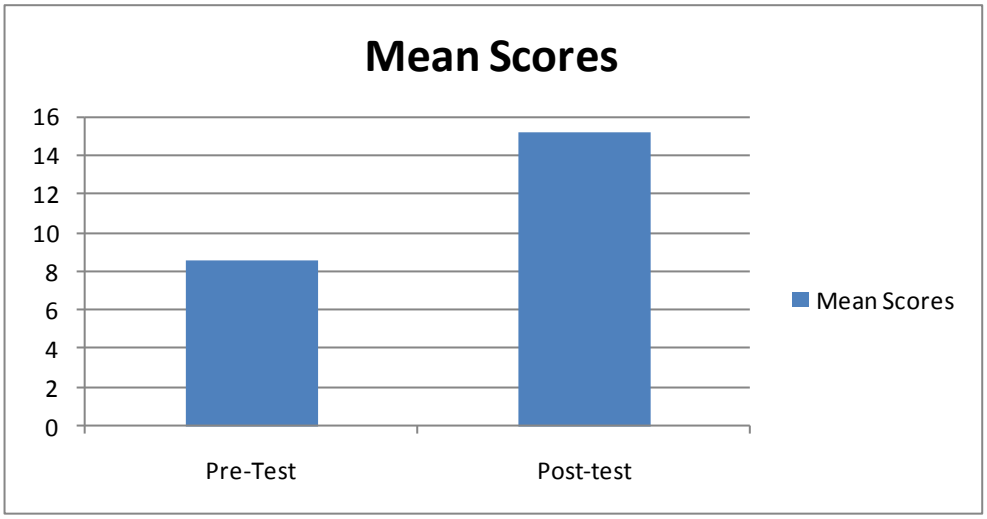
The Mean Scores of Students' Skills in Writing Descriptive texts



In Cycle 1, the average between meetings 1 and 2 was 2.76 for the content, 2.59 for the organization, 2.79 for the vocabulary, and 1.33 for the language use. It can be implied that the actions implemented in Cycle 1 were successful to improve students' skills in writing descriptive text in term of ideas generation. However, there were still some problems occurred dealing with the teaching-learning process and the students' grammatical features mastery. Consequently, the English teacher and I continued the cycle.

In Cycle 2, the average between meeting 3 and 4 was 3.18 for the content, 3.12 for the organization, 3.31 for the vocabulary, and 2.63 for the language use. It can be implied that the actions implemented in Cycle 2 were successful to improve students' skills writing descriptive texts in term of ideas generation and grammatical features mastery. Therefore, the English teacher and I decided to stop the cycle.

The Mean Scores of the Pre-test and the Post-test



The mean score of the pre-test was 8.54. The mean score of the post-test was 15.19. The gain score of the pre-test and the post-test was 6.65. It could be concluded that there was improvement in the students' skills in writing descriptive texts after the digital images were used in the class.

The fndings showed that digital images have three important points. They are practicality, novelty, and clarity. Practicality means that digital images were easy to operate, to fnd and even to make. Novelty means that digital images were something new and it is in line with the students' condition nowadays who live in the digital era. Clarity means that digital images were colorful and natural. The more colorful the images the better the students could generate their ideas.

The use of digital images in the research evidently improved the students' skills in writing descriptive texts. The improvements covered: 1) the students consider writing as an easy and interesting lesson, indicated by their enthusiasm to write, 2) students generated their ideas easier into paragraph, 3) and digital images improved the students' skills in writing descriptive texts in terms of grammatical, vocabulary, and sentence structure.

The improvement of the students' writing skills can be seen from the result of the gain score. The gain score of the means was 6.65, it could be concluded that there was improvement in the students' skills in writing descriptive texts after the digital images were used in the class.

DISCUSSION

As the fnal refection, the English teacher and I as the collaborator discussed the result of the research. They drew a conclusion that digital images can be the effective tools to help students in doing the writing project. In other words, digital images can improve students' skills in writing descriptive texts. Therefore, after the result of the last cycle had shown a good improvement in students' writing skills, the English teacher and I decided to stop the cycle. It can be seen from these data:

1) Qualitative Data

The sources of the qualitative data were acquired from the observation in the form of feld notes, interview transcripts, photographs, and samples of students' works. Those data gave the signifcant result of the research. From the observation and interview at the reconnaissance stage, it can be implied that students assumed English as a diffcult subject, especially writing. Since those problems occurred, the researcher and the English teacher decided to solve the problems by applying some strategic solutions. The solutions were by using digital images in combination with brainstorming, and also by group activities from the easier to more diffcult level or from guided to free practice. The aim of the solution is to motivate students to do their writing well with enjoyment. They could change their assumption that writing was diffcult. Besides, the students had diffculties in using appropriate vocabulary, punctuation, and capitalization. They also had diffculties in generating ideas and organizing them into good paragraphs. Moreover, they had low grammatical features mastery. Therefore, the English teacher and I agreed to use digital images combined with group work and brainstorming. The aim of the solution is to solve the writing problems in terms of ideas, grammatical features, and organization.

2) Quantitative Data

The quantitative data were acquired from the gain scores of the four writing aspects. However, to ease the interpretation, I present a conversion table consisting of six categories namely "very poor", "poor", "fair", "good", "very good", and "excellent". The table is presented as follows:

Conversion table of students' writing scores

No.	Class Interval	Categorization	Cycle 1		Cycle 2	
			1	2	3	4
1.	14.1 – 16.0	Excellent	-	-	-	12
2.	12.1 – 14.0	Very Good	-	-	2	12
3.	10.1 – 12.0	Good	-	13	34	13
4.	8.1 – 10.0	Fair	24	24	1	-
5.	6.1 – 8.0	Poor	13	-	-	-
6.	4.0 – 6.0	Very poor	-	-	-	-

Based on the table above, it can be interpreted that in the first meeting, there were still some students who were in the "poor" and "fair" categories, while in the second meeting, none of them were in poor category. In the third meeting, there is only 1 student who was in the "fair" category. Finally, in the fourth meeting, none of them were in very poor to fair categories. All of them improved their skills in writing descriptive texts.

CONCLUSIONS

Based on results of the research, it can be concluded that digital images could evidently improve the students' skills in writing descriptive texts. The improvement could be seen from some points. The first, the students did not consider writing as a boring and difficult lesson, indicated by their enthusiasm to write. The second, the students were able to generate their ideas into paragraph. The third, digital images improved the students' skills in writing descriptive texts in terms of grammar, vocabulary, and sentence structure. Moreover, digital images created interesting atmosphere in the classroom. It is because digital images have three important points. They are practicality, novelty, and clarity. Because of those three points, the students showed positive progress in writing skills. It was shown from the scores in the first and second cycles. They improved in constructing sentences, choosing appropriate vocabulary, organizing the generic structure, using correct grammar and integrating ideas. The improvement of the students' writing skills can be seen from the result of the tests. The mean score of the pre test was 8.54, while the mean score of the post test was 15.19. The gain score of the means is 6.65, it could be concluded that there was improvement in the students' skills in writing descriptive texts after the digital images were used to teach.

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DEVELOPING A PROCESS-BASED IN SCIENCE LEARNING THROUGH PROBLEM BASED LEARNING TO WELCOME THE IMPLEMENTATION OF CURRICULUM 2013

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ABSTRACT

Science learning essentially consists of the process aspect, product, and attitude. Nowadays, science learning tends to emphasize the only process aspect. Generally, teachers teach science concepts as transfer of knowledge and lack of activity involving students in the science learning process. Consequently, science learning solely sharpens the remembering and understanding aspects which are a low order of thinking. These conditions give less opportunity for students to construct knowledge from their learning experiences. Therefore, the reform of learning science from low order of thinking into higher order thinking needs to be done. One of the reform in science learnings that leads to higher order thinking is applying process-based in science learning. One of the alternative ways to realize the science learning that emphasizes the scientific process aspects and inquiry can be done with the Problem-Based Learning (PBL). PBL is not designed to help teachers convey as much as information to the students. It is designed primarily to assist students in developing thinking skills, problem solving and intellectual skills; to learn about a variety of adult roles by involving students in real or simulated experiences, and to create autonomous and independent learners.

Keywords: *process-based in science learning, problem-based learning*

A. PREFACE

Education has a considerable contribution to the intellectual life of the nation and qualified human resources preparation. Therefore, reform in education should always be done to improve the quality of education. The quality of a nation can be identified from the quality of education. History shows a good nation has a good education. Indonesia as a developing country must work hard to improve the quality of education to be more superior and competitive in globalization era.

In the context of educational reform, there are three main issues that need to be highlighted, namely the renewal of the curriculum, improving the teaching quality and learning effectiveness. Education curriculum should be comprehensive and responsive to social dynamics, relevant, do not overload, and accommodate the diversity of needs and technological advances. The quality of learning should be enhanced to improve the quality of educational outcomes. Specifically, it should be found a strategy or approach for effective learning in the classroom and empowering students potential. They are the focus of education reform in Indonesia (Nurhadi Senduk and Gerrard, 2003).

Renewal and improvement of the quality of education in Indonesia are done continually.

Government, through regulation no.19 of 2005 on National Education Standards, improves education in Indonesia to meet national education quality. In the national education standards there are eight standards that must be realized, i.e. content, process, competency, teachers and educators, facilities and infrastructure, management, financial, and assessment. They serve as a basis for planning, implementation, and monitoring of education in order to realize the quality of national education.

First and urgent step to realize the educational standards is realization standards of quality processes in science learning. Essentially, learning science consists of process, product, and attitude aspects. Nowadays, learning science tends to emphasize the process aspects. Generally, teachers teach science concepts as transfer of knowledge and lack of activity involving students in the science learning process. Consequently, science learning solely sharpens the remembering and understanding aspects which are a low order of thinking. These conditions give less opportunity for students to construct knowledge from their learning experiences. Therefore, the reform of learning science from low order of thinking into higher order thinking needs to be done. One of the ways is applying process-based in science learning.

B. DEVELOPING A PROCESS-BASED LEARNING IN SCIENCE

According to Gagne, learning is a process which enables organisms change their behavior due to experiences. Learning is a set of cognitive processes that change the nature of stimulation from the environment into a number of stages of information processing required to acquire new capabilities (Gagne and Margaret E. Bell Brigss in Gredler, 1994). The capabilities include intellectual skill, cognitive strategies, verbal information, attitudes and motor skills. These can be predicted as a result of learning. Those kinds of learning capabilities describe different actions or performance.

It can be concluded that learning is a process of change in a person's behavior due to experience in order to acquire the knowledge, skills and abilities gained from the process of cognitive and environmental stimuli. In order for learning outcomes as expected, the learning process should be effective.

Learning how to teach is a valuable educational activity. Educative value colors teachers and students interaction. Educative interaction occurs because the learning activities are carried out to achieve certain goals that have been formulated before (Syaiful, 1995). To achieve teaching objectives or competencies that have determined need the right classroom management.

A Good classroom management generates good teaching and learning interactions as well. Learning is a complex process, so it needs the right strategy in teaching to understand the characteristics of students. Student is a unique individual, so that not only cognitive aspects need to be developed, but also affective and psychomotor ones.

Wahidin (2006:9) states that in learning process students should not only have the scientific aspects, but also the skills and attitudes that can be used to solve problems in their life. This is relevant to the four pillars of UNESCO for education, i.e learning to know, learning to do, learning to be, and learning to live together.

Science learning activities can't be separated from a variety of constraints. Hopes that never fade away and always demanded is complete understanding of students in lessons that teachers delivered. But, how to realize an active and interesting learning is still a problem. To overcome these problems require innovative learning.

Innovation in the classroom needs to be done to realize the active, creative, attractive, and

effective learning. Therefore teaching paradigm of teacher must be changed, namely:

- From teacher centered into learner centered
- From competency-based learning into content-based learning
- From the product of learning into a process of learning
- From the summative evaluation into formative evaluation.

From that explanation, it can be concluded that process aspects need to get attention in learning process. Teachers should not only transfer knowledge to students, but also involve students' activities on how to construct or build the knowledge through the experience of learning.

Process based learning is a necessity to develop learning activities. Students must be trained how to construct knowledge and make it be more meaningful and stored in long term memory. This is in line with the opinion of Thomas M. Duffy and David H. Jonassen (1992), "Learning is active. Learning is an active process in which meaning is developed on the basis of experience".

In the view of constructivism, a human constructs or creates knowledge by trying to give meaning to the knowledge itself as appropriate experiences. That knowledge is a human construction and human gets new experiences constantly, so that is not stable. The understanding will be deeper and stronger after tested through new experiences. In this case the students need to be taught to solve problems, find useful thing, and express ideas that are useful for them.

Process-based science learning helps students store knowledge in long-term memory. Involving actively in learning process, students will get understanding easier. This is in line with the theory of information processing by Seifelt & Hufnung (1994) in Desmita (2005) shown in Figure 1.

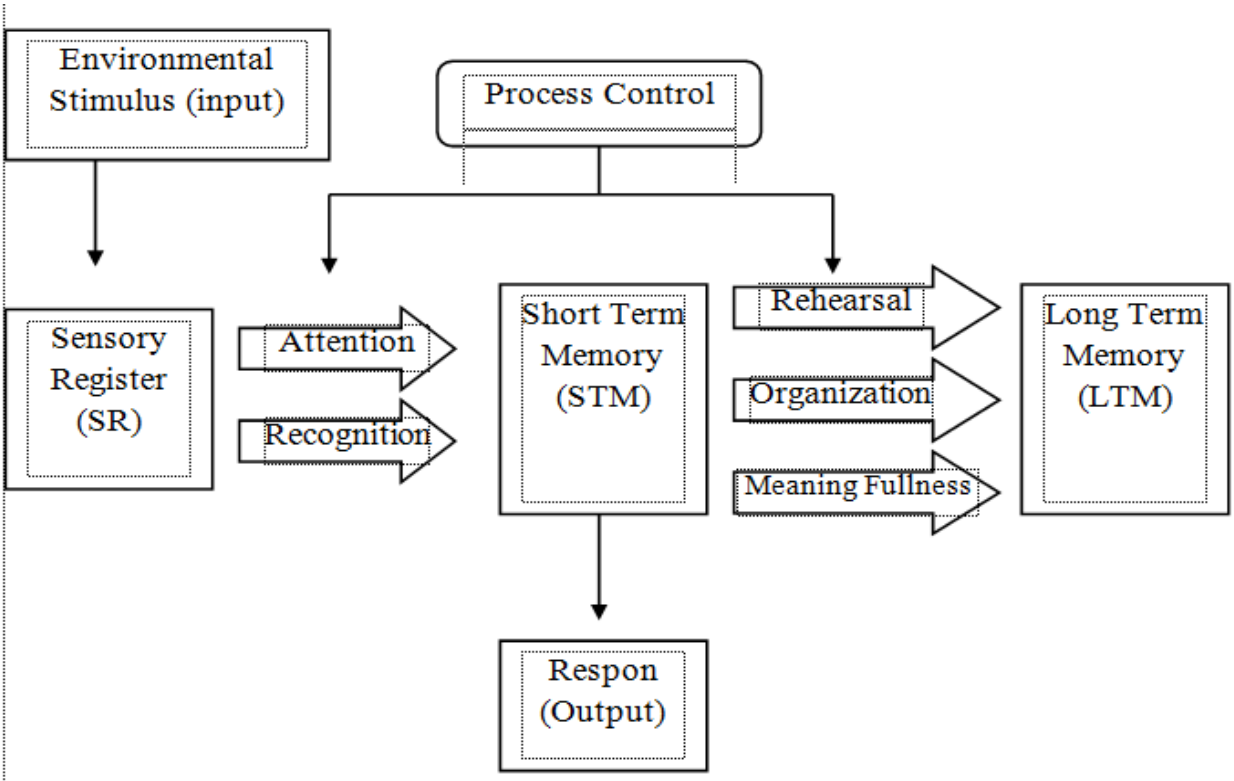

Figure 1. Cognition Model of Information Processing Theory
(Adapted from Seifelt & Hufnung, 1994)

From the information processing model, there are several main components: an environmental stimulus (input) Sensory Register (SR), Short Term Memory (STM), Long Term Memory (LTM) and response (output). When a student receives lessons (information) from the teacher (Environmental stimuli/input) through the senses, it will be stored temporarily in the Sensory Register (SR), a first storage memory. Sensory Registers record the information as what is received initially, but the information will disappear or not appear in two small sections. Information which gets special attention, such as demonstrations, observation, interesting and innovative learning media will be transferred to Short Term Memory (STM), the second storage memory, but the ability of STM accommodate only limited information, so that there is some information lost, the information can be captured then moves to the LTM, as a third storage memory. Information stored will be more permanent in LTM because it has an unlimited capacity, which can be invoked any time.

With the concept of process-based in science learning, it is expected to be a meaningful learning. Students are actively involved in knowledge construction and their thinking skills are more honed.

C. A PROCESS-BASED LEARNING IMPLEMENTATION THROUGH PROBLEM BASED LEARNING TO WELCOME THE IMPLEMENTATION OF CURRICULUM 2013

Science learning in curriculum 2013 is more emphasis on inquiry and scientific approach. One of alternative ways realizing the science learning that emphasizes the aspects of the scientific process and inquiry can be done through problem based learning.

Problem-Based Learning (PBL) is a learning model that is oriented towards problem solving developed from John Dewey's theory. To be able to solve the problem is required thinking process. Arends (1997:156) states that "Problem based learning is used in promoting higher-level thinking in problem oriented situations, including learning how to learn". According to Arends, Problem-based learning is a learning model that is used to increase the level of thinking oriented towards problems, including learning how to learn.

Nurhadi and Agus Gerrard Senduk (200:55) argues that "The Problem-Based Learning (PBL) is a teaching approach that uses real-world problems for students to learn about critical thinking and problem solving skills and to acquire the knowledge and the essential concepts of the subject matter". In PBL learning, students are required to be more active (student center), able to think critically, and solve problems. Teachers only present the issues, ask questions, facilitate the investigation, and do dialogue. Nevertheless, PBL teaching can't be implemented without developing a classroom environment that allows the exchange of ideas openly by teachers. Generally, Problem-Based Learning (PBL) presents to students authentic and meaningful problems that provide convenience to the students to conduct the investigation and discovery.

PBL is not designed to help teachers convey as much as information to the students. It is designed primarily to assist students in developing thinking skills, problem solving and intellectual skills; to learn about a variety of adult roles by involving students in real or simulated experiences, and to create autonomous and independent learners. According to Arends (2001:350), an illustration purposes PBL shows in the image below:

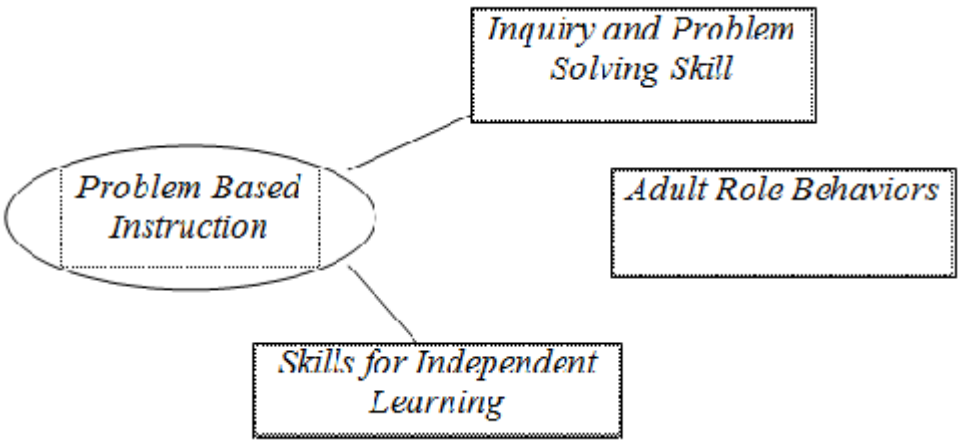

Figure 2. Learner Outcomes for Problem-Based Instruction

There are 5 special characteristics of problem-based instruction or problem-based learning (Krajcik, et al, 1994; Slavin, et al, 1992, in Arends, 1997:157): (1) Driving question or problems, (2) Interdisciplinary focus, (3) Authentic investigation, (4) Production of artifacts and exhibit, and (5) Collaboration.

PBL characteristics can be described in detail in the following description: Driving question or problems, PBL organizes around the questions or issues that are important socially and personally rather than on a certain academic principles. PBL is addressed to the real situation, avoids simple answers, in which there is a wide range of solutions with a variety of interests.

Interdisciplinary focus, PBL is selected on issues involving multiple disciplines, such as pollution problems due to the use of fertilizers by farmers which will involve biological, economic, social, tourism and government.

Authentic investigation, PBL requires following authentic investigation and looking for a real solution of real problems. Students must analyze and de f ne problems, develop hypotheses and make predictions, collect and analyze information, do an experiment (if necessary), and make conclusions.

Production of artifacts and exhibit, in the PBL students are required to construct a product in an artifact and exhibit that explains or shows the solution. Product could be a report, a physical model, or a computer program. This product was prepared by the students to be demonstrated to the others.

Collaboration, like the cooperative model, PBL is characterized by working with other people, in pairs or small groups. It occur the development of thinking and social skills.

Implementation of Problem Based Instruction (PBL) follows these phases (Arends, 2001:362):

Table 1. Phase (syntax) Problem Based Learning

Phases	Teacher activities
Phase 1: Orienting the issues to students	Teachers explain purposes of learning and all that needs to prepare, motivate the students to choose their own problem solving activities.
Phase 2: Organizing students to learn	Teachers help students determine and organize learning tasks related to the problem.
Phase 3: Guiding independent and group inquiry	Teachers encourage students to collect appropriate information, to conduct experiments and to seek explanations and solutions
Phase 4: Developing and presenting the artifacts and exhibits	Teachers guide students in planning and making a worthy artifact such as reports, videos, models, and help them work with other friends.
Phase 5: Analyzing and evaluating the process of problem solving	Teachers assist students in re f ecting the investigation and the processes they use.

From that explanation, it shows that the students have the opportunity to engage actively in the learning process. Therefore, Problem-based learning (PBL) could be an alternative way for science teachers to develop students' skills to higher order thinking.

D. CONCLUSION

Innovation in learning needs to be done to improve the quality of education. Process based learning is an active learning oriented on engaging students actively in constructing knowledge from a series of learning experiences. A process-based learning will make learning will not just be learning or transfer knowledge. It will make learning process be more meaningful. This implementation will ultimately enhance student competence, so it will contribute to the achievement of process standards and national education standards.

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MULTIPLE INTELEGENCY KEY TO SUCCESS FUTURE CHILD PRELIMINARY

By:
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ABSTRACT

The condition of the Indonesian nation after the Reformation, there was a massive change in the order of all aspects of life, both from the aspect of economy, politics and culture. These changes resulted in the Indonesian culture which began to shifted toward the pragmatic, hedonist and a liberal. All of which will impact on the morals and manners of the citizen began to shrink it rushes after materealis.

Education directed at how to create staffs are ready to fll in the spaces that are increasingly more competitive employment, which in the end values of moral education from neglected. The students, with all its potential is not developed to its full potential according to talent and intelligence, therefore the very essence of sublime values education is getting washed out. The condition of the Indonesian nation after the Reformation, there was a massive change in the order of all aspects of life, both from the aspect of economy, politics and culture. These changes resulted in the Indonesian culture which began to shifted toward the pragmatic, hedonist and a liberal. All of which will impact on the morals and manners of the citizen began to shrink it rushes after materealis.

A person's success in life is not enough to just set by the intellectual intelligence alone. Or in other words intellectually intelligent people not yet guarantee to be able to face any challenge and issues as well as the dynamics of a very complex life. One of them was Howard Gardner (1983) which offer what he named multiple intelligences (multiple intelligences).Education directed at how to create staffs are ready to fll in the spaces that are increasingly more competitive employment, which in the end values of moral education from neglected. The students, with all its potential is not developed to its full potential according to talent and intelligence, therefore the very essence of sublime values education is getting washed out. The condition of the Indonesian nation after the Reformation, there was a massive change in the order of all aspects of life, both from the aspect of economy, politics and culture. The intelligence of this compound will have a very powerful force, when maximized to form the students ' intelligence to ft the talents and interests of students. Students will develop with the force that exists in potential himself, so the educators in charge of guiding and directing students to achieve maximum potential in order to achieve the manners of noble. Success in life one doesn't quite simply determined by the intellectual intelligence alone. Or in other words intellectually intelligent people not yet guarantee to be able to face any challenge and issues as well as the dynamics of a very complex life. One of them was Howard Gardner (1983) which offer what he named multiple intelligences (multiple intelligences).

The intelligence of this compound will have a very powerful force, when maximized to form the students ' intelligence to ft the talents and interests of students. Students will develop with the

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force that exists in potential himself, so the educators in charge of guiding and directing students to achieve maximum potential in order to achieve a sublime character.

A. Background

The value of morals, morals and a sublime for all citizens may not need to be challenged. A country or a nation could collapse because some people behave of f cials and unscrupulous. Unscrupulous behavior will bring up the riots, not serve Inari, perversion and others which led to the destruction of a people. They do not have a handle in the life of a country and nation. Therefore, the values need to be taught in order for the current generation and future are able to behave in accordance with the expected moral. The intelligence of this compound will have a very powerful force, when maximized to form the students ' intelligence to f t the talents and interests of students. Students will develop with the force that exists in potential himself, so the educators in charge of guiding and directing students to achieve maximum potential in order to achieve the manners of sublime to success in life one is not enough.

Attainment of the immoral, Indonesia human character, noble character and lofty ethical goal of human development is Indonesia which are then implemented into the national education goals. Indonesia is fully human is a human who has manners. Manners are a mix of results ratio and taste which manifests in human behavior and intention. Character meaning good behavior, wise and humane. Background of the important the value of morals, morals and a noble for all citizens may not need to be challenged. A country or a nation could collapse because some people behave of f cials and unscrupulous. Unscrupulous behavior will bring up the riots, not serve Inari, perversion and others which led to the destruction of a people. They do not have a handle in the life of a country and nation. Therefore, the values need to be taught in order for the current generation and future capable Council.

Education is a very important thing for kids or acquired adult. Education became one of the capital for a person in order to be successful and able to succeed him. Through the educational potential of children as well as adults can be developed, because essentially every student has the potential and characteristics of intelligence itself. The potential of living become potential, will not be useful if not developed. Potential student who has developed and has become the ability to face the question of life, that's called intelligence. Attainment of the immoral, Indonesia human character, noble character and lofty ethical goal of human development is Indonesia which are then implemented into the national education goals. Indonesia is fully human is a human who has manners. Manners are a mix of results ratio and taste which manifests in human behavior and intention.

Potential students are not maximized through education that will be experienced by the children of the nation will cause human resources wasted. The nation's resources and will be the country that useless as it will only damage the order of development capital is citizens themselves, hence this article will elaborate on the importance of education to maximize the intelligence compound in education. That will determine whether or not the excellence of the superior resources of a nation in charge of life. Education is a very important thing for kids or acquired adult. Education became one of the capital for a person in order to be successful and able to succeed him. Through the educational potential of children as well as adults can be developed, because essentially every student has the potential and characteristics of intelligence itself. The potential of living become potential, will not be useful if not developed. Potential students who have developed.

B. Discussion

1. Develop intelligence compound

The success of someone in life is not enough just determined by artificce intellectual course. Or in other words a smart man in an intellectual manner not guarantee to be able to face all challenge and controversies as well as the dynamics of life are extremely complex. One of them is Howard Gardner (1983) that offers what a called of multiple intelligences (intelligence compound). He criticized way of measuring one's intelligence only in terms of intellectual course. He noted that the success of someone determined by some intelligence. In his book the frame of mind: the theory of multiple intelligences says that there are eight different types of intelligence, namely intelligence linguistics mathematically-logical, spatial, corporeal-kinesthetic manner, musical interpersonal, intrapersonal and naturalist (Efendi, 2005: 135-160).

Gardner said that intelligence is a series of skills (a set of skills) in problem solving a someone able to break back problems he faced, or difficulties are creating products effective and shall include potential discover or solving a problem (Efendi, 2005: 93). Briefy to be said that intelligence is capability of someone to be able to face all the problem and challenge life with setting (the idea of) that different. Intellegence lingustics is the ability to use a word effectively, either spoken and written. Besides intelligence is also includes ability to manipulate, the structure of a language phonology or sound of language, semantic, or of language meaning a pragmatic dimension or practical use language, rote, eksplanasi and metalanguge. Intellegence of mathematically-logical is the ability to use the points with good and doing correct reasoning. Intelligence is also includes sensibility in a pattern and a logical relation.

Intelligence of mathematically-logical is the ability to use the points with good and doing correct reasoning. Intelligence is also included in a pattern of sensitivity, and a logical relation a statement and a postulate, the function of logic and ability of abstract. Intelligence is capability spatial expressing the world spacial-visual of accurately and the ability to transform the perception of the spatial-visual meant in all aspects of life. Besides intelligence is also includes sensitivity to color, a line, the shape and the relationship between the elements of explanation and metalanguage. Intellegence of mathematically-logical is the ability to use the points with good and doing correct reasoning. Intelligence is also includes sensibility in a pattern and a logical relation

The ability to imagine, presented an idea visually or spatial, and orienting themselves in spatial matrik practices accurately. Intelligence of physical-kinestatik is using the whole body of expertise to express ideas and feelings, skill use of the hands to create something, and physical performance specif, such as: power, pliability; the speed and those things which pertain to the touch. Intelligence is capability of musicals appreciate the lands of a musical form, distinguishing, composes and to expressing. Intelligence is also includes sensitivity to rhythm, a pattern of tone or melody, and color tinge or shade of the sound of a song.

Intelligence intrapersonal is the ability understand yourself and acted on the understanding. Besides intelligence is also includes the awareness of mood, mean, motivation, temperament, desires, discipline themselves, and the ability to appreciate self. Intelligence naturalist is the ability to recognize and categorizing species of fora and fauna in an environment around. Intelligence is also includes sensitivity to other natural phenomena, and the ability to discern objects not live with objects of other living. Gardner said that any person to achieve success in life living must have some intelligence. It does not mean should be all (8 intelligence) is on a person. Perhaps 2-4 intelligence, but one that stands out.

Later in his invention of the next, he is still add more one intelligence that is the existential

(Suparno, intelligence et.al, 2002: 46). The concept of intelligence compound is a concept that uninspiring and challenge to become study theoretical or the implementation of emperical in the world of education and teaching.

Develop intelligence compound child is the major key to the success of future children. As an old man the present time we often pressing for a child with high achievement in academic in school become a champion. Develop intelligence compound child is the major key to the success of future children. The role of an old man in giving training and environmentalists who support is far more important in making intelligence a child.

The success of future front of the kids nation will be a source of power, the state of being superior because intelligence compound will require tough personal the son to have life in the face of challenges that big ego and pragmatic. Life being balanced is to be formed on the self children nation through the ability to optimize the use, intelligence compound with compound of intellegence will bring into a personal success. With personal success will make a person ' s executive whose success as well.

John Wareham (1992), said there were 10 years and basic element to become executive whose success as follows: 1. The ability to display a charm self proper. 2. The ability to manage energy self good. 3. The clarity and health value system personal and contracts inner. 4. Clarity of life target is expressed or implied 5. Intelligence that adequate (in the sense of reasoning) 6. The habit of good working. 7. Skill between humans good. 8. Capability of adaptation and maturity emotional. 9. Patterns of personality which precise with demands work. 10. Conformity stage and direction of expectatian of life style.

Dale Carnegie (1889-1955), don't even mention intelligence explicitly (in a general sense) as element of success he said that to succeed needed 10 (ten quality) is: 1. Confdence based on self-concept a healthy, 2. Skill communicate good 3. The skill of a good, between humans 4. The ability to govern themselves and others, 5. Attitude toward the person, positive test and the self, work 6. Skill sell the idea, and the idea 7. The ability to recall good 8. The ability to solve the problems, stress and feeze, 9. Enthusiasm ferce and 10. Insight living broad.

So it is obvious that intelligence, which is usually measured by a scale iq, is not a single element or ticket to success. John wareham, conclude of the above and when she was interviewed tens of thousands of would-be executive and supplies thousands of executive to a lot of company in its role as "head hunter". So also Dale Carnegie arrived at the conclusion after he interviewed many fgure successful contemporary at the time and after reading thousands of a biography and his autobiographical the success of all sorts of the feld of life.

2. Implication intelligence Compund in Manners

The challenge different lives on each individual, requiring mentally tough, intellectual adequate, and strength spiritual agency, high the intellectual ability, spiritual man and emotional balanced will create human really tough. Readiness of man be able to stand in life the era of hedonism, materalism requires of strong behavior. So human need the manners, because the manners of this is needed, containing the meaning of good behavior wise, and humane. The manners of was supported by the power of spiritual man that is, the ratio, taste, and intention which eventually came into behavior that can be measured and becomes a reality in life.

Education is a very important thing to be procured children or adults. Education became one of capital for someone so as to be successful and able to achieve success in her life. Remember

the importance of education and the government must be articulated programs of compulsory nine years. To change our curriculum and to try to accommodate the needs of the students.

Intelligence intellectual not only includes intelligence logic and verbs, but also to be seen of the aspect of kinetic, musical, visual-spartial, interpersonal, intrapersonal, and naturalist.

We tend to only respect a person who is expert in the ability of logic and language. We need to give attention being balanced against people who are having talents (a) in the intelligence that others. See how important the learning process for humans, despite few or many role of teacher is very important. The teacher as fgures of personal, human of "monopluralis" having many weakness and excess. However, weakness possessed a teacher should not block of for a learning process itself.

Considering man is a human of "monopluralism", the man having many sides natures (plural), but, it is one unifed whole. If viewed from his place, the arrangement of, and by its very nature, human nature is "monodualis".

As creatures of the lord and as creatures of individual comprising the soul and body. The teacher in the process of learning also be looking at students as creatures of "monopluralis". Thus then all potentials owned by students can thrive with optimal.dan all potential they shall inherit it can be used to humanize human in the process of learning.

C. Cover Conclusion

1. Drawing Conclusions

The state requires a source of human resources development, who excels in flling superior human resource determined by a citizen who has intelligence and magnanimity a noble mind. Intelligence a child not only determined by artifce intellectual, or intelligence in mathematical.

Human born with talent and bring interest diverse, therefore it is not fair when as parents and educator, society demanding someone to have uniformity in intelligence mononton, therefore intelligence compounded of optimized will form of private men it as a person who has the manners which is sublime and independently. Required by the nation to embody nation prosperous and dignifed.

2. Suggestions And Recommendations

In giving of learning, we can use the framework of intelligence compound in carrying out the process of teaching widely. Activity that can be done as drawing, created the song, listening to music, and saw the can into the entrance of a vital into the learning process. Even students who his less good at learning process using patterns of traditional (emphasizing language and logic). If this activity performed would bring them to the spirit of them to learn.

With wit compound, then we will provide an opportunity for a student to study in accordance with their needs, interest, and his talent. The role of the old man and society will increase in support of learning process. This could happen because every activity students in learning process will involve a member of society. Students will be able to show and tobe share abaout excess fle. Build excess that they will give a motivation to make students as a specialist.

By the time you teach to understand students will get learning experience a positive and improve its ability to fnd a solution in solving the problem that it faces. Intelligence compound give the view that there are nine kinds of intelligence that is shared by everyone. That differentiates between one to the other is a composition or domination of intelligence.

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DEVELOPING STUDENT'S ADVERSITY QUOTIENT (AQ) THROUGH INSPIRATIONAL STORIES

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Abstract

Adversity Quotient (AQ) is the intelligence in struggling to overcome difficulties. A climber type student has a high AQ. This type of student is persevere, tenacious and tough in facing difficulties. They always strive to find the way out when facing difficulties. They never let anything get in their way to their dreams, that is why AQ is really needed in learning process, whether it is at home or at school. With that said, student's Adversity Qoutient needs to be cultivated continuously and to be applied in any learning, i.e through inspirational stories that touch and awaken student's conscience to be able to change and improve. With their imagination and high ability to imitate, school children will easily copy the struggling of children around the world. The stories may be taken from many sources, such as stories of great people who went through hardships during their childhood, like Rasulullah SAW and his friends, story of the president of South Korea, president of South Africa and other stories of children who became heroes to their families and friends.

Keywords: ***Adversity Quotient, Quitter, Camper, Climber*, *and inspirational stories***

A. Introduction

The ranking system applied to students is good in a way, to develop their spirit of competition, but on the other side is defled when the ranking was only based on student's cognitive skills and ignores other aspects (like psychomotor and affective skills). Moreover, ranking system could have a potential to create a level gap in class, a proud for those achieving first rank, second or third, and made student whose position was at the bottom feels inconfident. Ranking system could also drives students to do whatever it takes (by cheating) for them to achieve the top rank (Sudarman, 2012).

The fact is, there are many parents still hold that achievement and intelligence of their children were laid only on written test, especially for certain subject; like science and math. Parents get disappointed in an instant when their children got unexpectedly low scores on those two subjects even if scores on other subjects or morals were fine. As did parents when their children got high scores on those two subject, while underestimating other subjects or moral values. There are even parents who force their children to take major science class eventhough their children obviously were not qualified enough for that. Most of the reason they do it was no other than for the sake of dignity.

It would be better if every single students and parents were given the representation of each children's achievements or ability as mentioned in the theory of multiple intelligence by Howard

Gardner. It is said that being clever/smart is not only happened when children shine for math and science subjects. There are many intelligences every students have (for example, mathematics, literatures, science, musics, interpersonal intelligence, kinesthetics, spatial, et cetera). A student may be good in math but they should be noticed that they have other abilities and intelligences that their friends do not have, for example kinesthetic or intrapersonal intelligence. It could be a better thing because it develops confidence in students as well as parents.

Something author think was important is how a teacher is able to engraft values and skill for students to face the reality in life. In other words, it is how students could develop their intelligence in overcoming every problems they were facing in life, in order to be an independent person and able to survive in all kind of situations and conditions. It means that real experiences are more useful than just mastery of strict theories attached to students, which in author's opinion relevance is very far from the real life. Thus, simulation, role playing, problem solving, brain storming and inspirative story telling related to reality these days, in author's opinion, are more helpful than constraining students to answer closed questions with textual answers from books they read, that only rely on student's memory.

This fact at the same time shows that intelligence can be contextual. The problem students facing or the context are important factors when considering to put citation of intelligence. As Stoltz (2000) said, it is not only IQ or EQ that determine one's success, but another one factor which has incredible influence to one's success, that is intelligence in overcoming a trouble also known as adversity quotient (AQ). AQ can be improved, hence student with low AQ may improve to be one with higher AQ.

Someone whose AQ is high would not give up easily in facing a challenge. They are the philosopher as well as warrior who always consider and fight for every possibilities, also they would never let anything get in their way to their dreams. Student with AQ never give up hopes in going through education, including in working on assignments given by their teachers. This potentital, of course, will be very useful when applied at school. The problem is how to integrate the AQ to learning process. This paper tries to integrate AQ to learning. Integrating AQ to learning in this case is not in the form of learning model development, but at the level of concept study.

B. Definiton of Adversity Quotient

Adversity Quotient (AQ) is an intelligence in facing difficulties (Stoltz, 2000). There are other widely used terms that are similar to that, such as AQ is the potential to be persistent (Subiyanto, 2006), AQ is them mental reliability (Laksmono, 2006), and AQ is the intelligence of being tough (Effendi, 2005). Assad (2012) stated that AQ is an intelligence gained by people after having difficulty and misery of life. As Stoltz (2000) claimed, htere are three forms of AQ: (1) AQ is a new conceptual frame to understand and improve all features of success, (2) AQ is a measure to know one's respond to handle difficulties, (3) AQ is a series of tools which have sciential basic to improve people's respond on difficulties. Moreover Stoltz (2000) stated that AQ may predict these features: outcome, motivation, empowerment, creativity, happiness, vitality and excitement, emotional health, physical health, diligence, productivity, knowledge, energy, hope, endurance, behavior, long life and respond to change.

A kid with high adversity intelligence is able to process information from their suroundings effectively, thus they face challenges easily and creatively in finding various alternatives of solutions, managing their behaviour properly, able to protect themselves from any bad influences, and learning from their experiences.

Most of the time, children are friendly and be familiar with their environment easily. They also creative, innovative, confident dan hold strong motivation. They are able to find positive source of happiness, believe in their skills to overcome various challenges and obstacles, also having high fighting spirits and never give up. These children usually appear as healthy children, rarely fell ill, rarely have indigestion, do not experience insomnia, and do not have behavioral disorder like biting nails, pulling hair, being angry or sobbing for no reason, fussy, anti social, et cetera.

Children whose adversity intelligence are fine would not stressed easily, that the adrenalin produced in proper amount. Children who stressed easily will experience hormonal disorder, running out of vitamin and minerals, weakened imune system, hence will be easily fell ill.

One's success in work and life is highly influenced by AQ. People with high AQ would not blame other party for trouble they are facing but being responsible to fix the problem. They do not easily complain nor despair even in the worst condition. On the contrary, with all their limitations, they are capable to think, act and make strategies to move on. Otherwise, low AQ means dullness of life durability. One with low AQ complains all day when going through hardships and unable to see wisdom inside the problem they are facing.

Stoltz (2000) described this life as like climbing a mountain. When someone reach the top of the mountain, it means that they has overcome trouble. The term "mountain climbing" in the context of education means: passing an exam, achieve high scores on certain subjects, be a winner at some championship, mastering certain subject, being a leader in school organization, gaining scholarship, et cetera.

C. Components of Adversity Quotient

Four main component of AQ according to Stolz (2000) known as CO2RE consists of C = Control, O2 = Origin and Ownership, R = Reach, and E = Endurance. These four components really influence someone's success, because they may form one's mindset, which is how to see this life.

Control asks how much (strength) someone has over some event that cause hardships. The higher score in C dimension, the bigger possibility for someone to have a strong control over a problem which is met. On the contrary, the lower score in C dimension, the bigger possibility a person felt that the trouble was out of control. Stolz (2000) proposed the tendency of people whose score is low in C dimension. For example: that is beyond my reach, ther is nothing I can do, and it is impossible for you to fight, because they are board members. Furthermore, Stolz (2000) proposed some examples of expressions by people with high AQ: wow, this is hard, but I have seen harder, there must be something I can do, there is always a way, brave people will win, and I should find another way.

Origin and *Ownership* asks the origin of hardship and how far a person admit that hardship they are facing. The origin and ownership component known as O2. The higher O2 score the bigger possibility someone see that success was always there and main cause came from the outside. On the contrary, the lower O2 score, the bigger possibility of someone thought that the cause was themselves. When they make an achievement, they will think that the success came from luck which is caused by other people or factors.

According to Stolz (2000), those whose origin score is low tend to think: (a) it was all my fault; (b) I am really stupid; (c) I should have known that; (d) What was I thinking?; (e) I do not understand; (f) I have mess up everything; and (g) I am such a failure. Furthermore Stolz (2000)

proposed that people whose origin respon is high will think: (a) It was not the right time; (b) the whole industri is in pain; (c) everyone is having hard days lately, he/she is just not in a good mood; (d) some of team members did not contribute; (e) my kid was ill and I should stay up late to take care of him/her; (f) no one could predict this; (g) there are some factors in it; (h) the whole team members disappoint ore hopes; (i) after all consideration I knew I should not take this job or program.

Reach asks how far the hardship will reach other aspects of one's life. Low AQ will let the hardship seeps to other sides of someone's life. Meeting that did not go well will screw all activities on that day; conflict may ruin a relationship; negative assessment of outcome will slow down one's career, that will then cause a financial panic, sleep disorder, bitter, stay out of people, and bad decision making. The lower reach component score the bigger possibility of someone consider bad things happened as disaster and let it escalate. Of course this will hamper the way to success, and the worst is it is very dangerous because it will make damage when uncontrolled. Conversely, the higher one's R component score, the bigger possibility for people to limit problem's reach on the event they are facing.

*Enduran*ce asks two related things: how long the hardship will go and how long the cause will last. The lower a person's E score, the bigger possibility to consider that hardship and the cause will last long, or even forever. For example, frustated people commit suicide or get depressed. The higher E score, the bigger possibility to see a success as something that will last long, or even permanently. This kind of people consider a problem and its cause as something temporary, will be gone in a flash and seem to never be happened again. This will improve one's energy, optimism, and the change to act. These people is used to think positively, be grateful of what they have, having a good life, love to socialize, caring, and full of spirit.

D. Types of Adversity Quotient

Stoltz (2000) proposed three types of AQ: *quitter* (low AQ), *camper* (medium AQ and *climber* (high AQ). A quitter is someone who tries to get away of problem. Some characteristics of quitter are: minimum effort, backing off when seeing difficulties, and afraid to face their problems. They give up their dreams and take paths that are smooth and easier for them. They are tend to be cynical, gloomy and cold-hearted, or being grumpy and frustated, blaming people around them and hating people who strive to move forward. Quitters are also often became alcoholic, and drugs addicts. They seek escapement to find peace for their heart and mind, they run away from the effort to improve, which also means that they are ignoring potentials they have in this life. Quitters are those who think that math is complicated, hard, confusing, and such a pain. They are low motivated, thus giving up once they found some difficulties at finding solution on math problems and stop without any effort.

A *champer* type is a kind who do not take big risks and satisfed only with what they have or the condition of they are now. They often ignore possibilities they are going to get. This kind of people satisfed easily or feels okay just being at the middle. Champer ones feels good enough with their own illusion of what has been there, and sacrifce the possibility to see or experience something that probably be happened. They do not maximize their effort even if there is a chance and opportunity. There is no effort to study harder. When studying mathematics, champer students do not study as best as they can, they just study. They think high score is not necessary as long as they passed the exam, achieving top rank is not necessary as long as they make it to higher grade.

Climber type is the kid who has goals or target. To accomplish that goal, they are capable

to fght diligently and perseverly. Moreover, they are brave and discipline. Suppose that they are willing to climb to the top of the mountain, then they will keep trying until they are sure that they have made it to the top. This type of people have good AQ. Climber type students like studying math. Assignments given by their teacher are completed properly and on time. When they fnd mathematic problems that are hard to solve, they will try their best to solve the problems. They do not know the word giving up. They will try various ways and methods. They also brave and discipline. They are the participants of many olimpics, like mathematics, physics olimpics, robot designing contest, English contest, as well as participat of many sport championships like karate, badminton, athletics, cycling, also in art performance such as singing, drumband, poems, music performance, et cetera.

E. Improving Adversity Quotient for Primary School Students

Stoltz (2000) proposed that LEAD concept is very effective in helping people to create permanent improvements of AQ as well as in responding hardships. LEAD is L = listen (listen to your respond regarding hardship), E = explore (explore the origin and your ownership on the efect occurs), A = analize (analize the evidences) and D = Do (do something/act).

Cultivating children's AQ is not only teacher's responsibility, but also parents, who have a big role. It is often found that parents foster their children by spoiling them. Fostering and educating by spoiling children is defective, it makes children sappy. Seligman in Arswandi (2006) stated that, "spoiling children is a process to powerlessness or duping." Consequently, there are many adult children, even those who have been graduated cannot cope with problem even the simple ones and still have ask for other people's help, especially their parents.

Why many children get frustrated nowadays? That is the symptom seen when someone cannot overcome trouble they were facing. According to Barlianto (2007), parents tend to shower their children with facility or easiness, hence children's AQ is not developed. The fault lies on the easiness or facility that is not followed by giving a chance to children to try to solve the problem frst. Consequently children are accustomed to receive something with no effort, or even it could be children escaping when they see problems. For example, a child found diffculties in studying math. To help the kid, parents provide him/her with extra course on mathematics. That made the child dependent to teacher and not getting motivated to study math. If that has already happened, try to slowly change the foster pattern on children, so they have the opportunity to solve their own problems and grow to be "tough" children.

Furthermore, parents can cultivate children's AQ by: (a) not to grant children's wish easily, (b) tell stories of success of people who have overcome diffculties, (c) remind them to hold on when facing hardships, (d) persuate children to know themseleves, their weaknesses need to be removed and skills that have to be improved, (e) persuate children to pray earnestly and surrender all the efforts to God, (f) when they failed, explain that God will make it up with something better.

Do not grant children's wish easily. When children ask for something, fnd a way so they would make an effort. Do negotiate with the children. For example, when they ask for toys, tell them that they have to collect their pin money. Once the money is collected as much as needed for the toy that is wanted, the toy can be rewarded. Try to give reward in regard to efforts on changing bad behaviours. For example, buy them toys only if the kid confdently work on assignment before their friends in class, or wake up earlier. Observe for a month, if something is changed then the toy can be given. If nothing occurs, then delay buying toys for children until something is changed, even just a little.

F. Inspirational Stories to Improve AQ

Inspirational stories may touch and awaken children to change and improve. Lead by their high imagination and ability to imitate, primary school children will easily imitate stories that inspire them. The stories can be come from various sources. Their suroundings with many kinds of people and their characteristics could be awakening stories. Collected inspirational works may come in the form of books, movies, uploaded to the internet, or spread by the word of mouth. Stories which uplift children's spirit to perform kindness and build their intelligence to "fght" (AQ) are indeed veluable learning.

One of the inspirational stories is the story of pressident of South Korea, who also a former CEO of Hyundai, Lee Myung-Bak. Lee was born in Osaka, Japan on December 19th, 1941. He has been familar with poverty since his childhood as his father was a farmer while his mother sold vegetables, but because of his persistence and hard work for 22 years, he made it to the top position as CEO of Hyundai. After being a CEO of Hyundai, Lee stepped in to politics and elected as the mayor of Seoul. It was not all that. In 2005, Lee Myung-Bak was elected as the president of South Korea. How amazing! Son of a poor farmer eventually be the top person in industrial developed country like South Korea. That is why Lee Myung-Bak is called "Bulldozer" who strike all the obstacles in front of him with no mercy (Assad, 2012). Other stories are stories of 5 Incredible Kids written below **(**http://maskolis.blogspot.com/2011/11/inilah-5-bocah-cilik-yang-sangat-luar.html).

We might never thought of doing these kind of things in situations these kids were in when we were young. At that time, probably the most crucial moment was when our wishes were not granted by our parents. Here are some of the story about 5 incredible children who did something great eventhough people thought they are "small":

1. Nathan Thomson, a 9-years old kid who saved his mother from being stabbed by unknown man

The kid was stabbed at his face when he was fghting to save his mother from an unknown man. Nathan Thomson jumped to Hugh Clark's back, a drunk man who intended to stab Nathan's mother, Ena, while they were walking on the street at night. The drunk man turn into Nathan and unsheathe his knife to Nathan after stabbing Ena 8 times. Fortunately, both of them were safe and this event was handled by the authorities at the spot.

2. Charlie Simpson, a 7-years old child who cycle around the town to collect donation for earthquake survivors in Haiti

Charlie started his effort with simple message, "My name is Charlie Simpson, I am conducting a sponsored activity, cycling for Haiti, because was an earthquake and many people died. I want to collect money to buy foods, water and tends for Haitians." Charlie wished to collect 500 euros by cycling 15 miles around the city park. However his effort had touched many hearts and he succeeded collect 120.000 euros for Haitians.

3. Lin Hao, a boy who saved his classmates during an earthquake

Lin Hao was at 2nd grade at primary school and was a class leader for 30 of his friends. When an earthquake happened, the whole building collapsed and befell into Lin Hao and his friends. The entire class tried to safe their lives. However before he escaped from the disaster, he went back to the ruins and saved two of his friends who were stucked between debrises. Being asked why he would risk his life for his friendsm he simply answered, "I am the class leader and I should be responsible for my friends."

4. Alexis Goggin, a 7-years old kid who made her body as a shield to save his mother's life

Alexis Goggin, the 1st grader girl at primary school was cited as "an angel from heaven" after jumping in front of an armed man and made her body as a shield against 6 bullets aimed to her mother. The mother, Selietha Parker, 30, was shot at her left temple and arm by her raging boyfriend. Before he shot another bullet to Selietha, Alexis jumped in fornt of the man and plead not to kill her mother. Fortunately, both of them were safe.

5. Ibrahim Ouaida, a 8-years old boy drowned after saving his sister's life

It happened when Ibrahim swam at Sandridge beach, Melbourne with his 10-years old elder sister, Sarah. A big wave came at once and swiped them to the sea. His sister kept asking for help. Ibrahim came and screamed, "I'm coming, Sis, I'm coming!" Ibrahim pulled his sister's head to the surface and kept them afoat shile saying, "I love you, you will be okay." When a lifeguard came, Ibrahim asked to safe his unconsious sister and said, "Please safe her, my mother needs her, she is so precious." After the lifeguard brought Sarah to the beach and look for Ibrahim, he had gone. For his bravery, he was given a "Bravery medal" by local government.

G. Conclusion

According to the expalanation stated above, it can be concluded:

1. Adversity Quotient (AQ) is an intelligence in fghting against hardship. Three types of AQ according to Stoltz (200): the Quitter (low AQ), Champer (medium AQ) and Climber (high AQ). Characteristics of a Quitter includes: minimum effort, step back as they see diffculties and afraid to face problems. Champer types are the ones who would not take big risks and being satisfed with conditions they already have or position they achieved. They also ignore possibilites they might get. Children with fne adversity intelligence love challenges, do not get stressed easily, so adrenaline are produced properly.

2. Students with high AQ or Climbers are tenacious, diligent and tough when facing troubles, always think positively, keep moving and fghting to reach the top. They always strive to fnd solutions for their problems. They never let something block their way to their dreams. Thus, AQ is necessary for student in their learning process, whether it was at home or school. In real life, these people keep moving forward adn see challenges as opportunities. An obstacle may be disaster to someone, but it is a gift for them because it will take them to the top. These are the people who will succeed in fulflling their dreams.

3. Therefore, Adversity Quotient need to be cultivated for children and to be integrated into every learning. One of the way to do that is by telling inspirational stories which touch and awaken children's conscience to change and improve to be a better person. Having high imagination and ability to imitate, primary school students will easily imitate stories of struggle of children around the world. Those stories may come from various sources, stories of great people who overcame hardship during their childhoods, such as Rasulullah SAW and friends, the president of South Korean lee Myung-Bak, the president of South Africa Nelson Mandela, and aforementioned stories of children who became heroes for their families and friends.

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