ICEE-2

Multiple Intelligence Potential and Influencing Factors for Elementary School Students Analysis

Nurani Hadnistia Darmawan✉[1], Hilman Hilmawan[2]

[1,2] Department of Primary School Teacher Education, STKIP Bina Mutiara Sukabumi, Sukabumi, Indonesia
✉ nhalfaruq@gmail.com

Abstract. The problem in this research is the absence of efforts made by teachers to explore and stimulate the intelligence potential of elementary school-age children. This research aims to find and analyze Elementary School students' multiple intelligence and its influencing factors. The research method used is descriptive analysis. The profiles of student's multiple intelligence potential and its influencing factors are taken by observing, interviewing, and studying documentaries. The subjects of the research are six students from grade two in Sukarasa 3 & 4 elementary school, Bandung. The result of the research shows that elementary school students' multiple intelligence in all intelligence dimensions are on a good development rate despite not prevalent to all of the students. This can be seen from the appearance of indicators in each intelligence dimension. Dominantly developed intelligence is verbal-linguistic, logical-mathematical, and kinesthetic intelligence. The next most dominantly developed are intrapersonal, musical, and interpersonal intelligence. Visual-spatial and naturalist intelligence still needs more stimulation or development efforts. Factors that can influence the student's multiple intelligence potential are stimulation and environment. Teachers' help and teaching media and methods can be used for this purpose. Moreover, the interview is found that parents' intervention can stimulate children's multiple intelligence potentials.

Keywords: Multiple intelligence, elementary school students

INTRODUCTION ~ The age of elementary school children is a golden period, where the potential for multiple intelligences and various aspects of development will develop rapidly. If at this time the child does not get positive stimulation and is holistic then the child's development is not optimal. Therefore, early stimulation in childhood is very beneficial for the next child's life. According to Nurihsan (2003: 13), the age of elementary school children is also one of the most important periods in individual development. Children need to be equipped with various abilities and stimulated all their potential as provisions in the future. Problems that will be faced by children in the future are not minor problems but need a variety of life skills. The inability of children to solve various problems in their lives later in life will make children experience difficulties in living their lives. Therefore, we need an effort that is oriented to the development of all the potential possessed by children, which in the end the resulting output is a child who has optimal basic intelligence qualifications in general.

The development of children's potential is inseparable from the existence of educational institutions, both formal, informal and non-formal education. One of the early educational institutions for children to develop the full potential of children, including multiple intelligences, is elementary school education. The principle of learning in primary schools is collaborative which not only focuses on the development of one aspect but is oriented to the development of all aspects

of child development (holistic) (Nurihsan, 2003: 18). The implication in the learning process, teachers should provide "freedom" for children in conducting learning activities and stimulate children to develop one or several multiple intelligences so that they are more capable and skilled.

Multiple intelligence according to Gardner (Surya, 2004; Kartadinata, 2008; and Megawangi, 2004) is the ability to solve problems or the ability to work to produce something of value to the social, cultural, or environmental environment. This assumption emphasizes that intelligence is obtained not only from cognitive aspects but also from affective and psychomotor aspects. In addition, this ability can create something or offer a valuable service in a culture of society in line with the development of the age of the brain structure, such as the central core, limbic system, and cerebral hemisphere; (b) there is intelligence that is prominent in certain people (savant and genius); (c) intelligence is related to culture and develops following certain patterns of development; (d) has a historical context; (e) has a relationship with psychometric findings; (f) has a relationship with the results of experimental psychology research; (g) a way of working or a series of basic ways of working can be identified; and (h) has its own unique marking system or symbol. The criteria put forward by Gardner is proof that the theory of multiple intelligences is not only developed based on the results of his studies but also uses the basis and work of the developmental and intelligence theorists who emerged first.

Gardner (2003: 67-68) argues that intelligence is an ability related to three things, namely: (a) the ability to solve problems that occur in everyday life; (b) the ability to produce new problems to be solved; and (c) the ability to create something or offer services that will reward local culture. Furthermore, Gardner (2003: 45) explains, as the biological potential of intelligence will increase according to age and reach its peak in adulthood and decrease in old age, while intelligence as a psychological potential for intelligence will develop due to the learning process and the formation of life experiences in individual self. Based on the explanation put forward by Gardner, it can be stated that intelligence as an ability possessed by individuals that can develop naturally and can also be developed through learning and experience. This means the environment can play a role in helping individuals to develop their abilities.

According to Gardner (Özdemir, 2010), intelligence is a combination of abilities that exist in various parts of the brain but not a single IQ score as previously believed. The intelligence can proceed, interrelated with each other and as intelligence itself. According to (Ehrlinger, Mitchum, & Dweck, 2016) intelligence is an ability possessed by someone that can be developed over time. In line with what was stated by (Todor, 2014) that the quality of

intelligence can be developed through learning activities.

Gardner stressed that the most important thing in learning activities that develop multiple intelligences is to prioritize depth and not breadth (Palmer, 2003: 489). For this reason, he advises both teachers and parents to help hone one of the prominent intelligence, for example, logical-mathematical intelligence as well as stimulate their linguistic intelligence. This means that children's lives need to be enriched through the development of various types of intelligence at the most possible level. If children have the opportunity to learn through their strengths, cognitive, emotional, social and even positive and amazing physical changes will emerge.

According to Hurlock (2012: 114), the development of multiple intelligences is usually developed in the period of childhood, because at this time is considered as a time of learning to achieve various skills. At this time children love to repeat important things to learn skills, brave and happy to try new things. Abilities are usually mastered by children at this time such as the ability to read, count, understand something, and others. During this period the child experiences change both physically and psychologically.

Gardner (Armstrong, 2013: 23) explained that every child has eight types of intelligence and can develop all of them to a reasonable level of competence and along the way up the school level, most likely the child begins to determine ways of learning that lead to some intelligence. In other words, children have begun to show a tendency towards certain intelligence.

Armstrong (2004: 17) in various studies shows that the development of the multiple dimensions of intelligence can be stimulated through various stimulations of the environment. In line with what was stated by Santrock (2012: 340) that most researchers agreed that genetic and environmental interactions affect intelligence. This indicates that it is not only genetic donations that affect one's intelligence, environmental influences, and stimulation that are given also determine.

Other relevant research is by Al Ghraibeh (2012) with the title "*Brain Based Learning and Its Relationships with Multiple Intelligences*". The results of his research indicate that there is a strong correlation between brain-based learning abilities with multiple intelligences associated with optimizing brain function, both left and right brain. Research by (Bowles, 2014) with the title "*Self-rated Estimates of Multiple Intelligences Based on Approaches to Learning*". This research results show that multiple intelligences can be observed through various learning approaches.

Research (Fonseca-mora & Arnold, 2004) with the title "*Multiple Intelligence Theory and* Foreign *Language Learning: A Brain-based Perspective*", the results of the study show that in applying the theory of plural intelligence specifically to stimulate verbal-

linguistic intelligence (foreign language learning) can be done by various methods/ways.

Other relevant research is by (Mohamed & Ghraibeh, 2016) with the title "*Brain Based Learning and Its Relationships with Multiple Intelligences*". The results of his research show that there is a strong correlation between brain-based learning abilities with multiple intelligences associated with optimizing brain function, both left brain and right brain.

METHOD

This research uses a qualitative approach with descriptive method design (Creswell, 2012).

DATA COLLECTION TECHNIQUE

To uncover and answer research questions, the researchers used three data collection techniques namely observation, interviews, and documentation studies.

1. Observation

Observations in this study were used to collect data on the profile of the achievement of the potential for multiple intelligences that have been shown by children in learning activities. The observation technique in this research is participatory observation that is passive participation, in which researchers position themselves passively by directly observing various children's behavior that is included in the framework of multiple intelligence theories without providing any intervention in learning activities that take place inside or outside the classroom, so that it does not interfere with the effectiveness and quality of learning.

2. Interview

Interviews were conducted with grade 2 teachers who taught at the school where the research subjects were and the parents/guardians of the research subjects. Based on these interview activities, it is expected that data will be collected about the profile of multiple intelligences that have been shown by children and the factors that influence them. The results of the interview are used to complete data that might not be recorded through observation techniques.

3. Documentation Study

Documentation is used to determine the curriculum used as a reference for the learning process.

THE SUBJECTS STUDY

1. The subjects of the research are six students from grade two in Sukarasa 3 & 4 elementary school, Bandung. The six students were chosen based on the consideration of the class teacher who stated that the abilities/intelligence of each student was relatively varied. In other words, the data taken can be representative.
2. Class teacher numbering 1 person, to get data about the profile of the plural potential of children's intelligence, learning activities, and factors that can affect the potential of multiple intelligences.

3. A total of 6 parents, to obtain data about factors that can affect the potential of multiple intelligences.

Research Procedure

1. Research Preparation Phase
   This stage begins with activities in the form of literature studies as material to be used as references related to issues that are the focus of research and exploratory studies to research subjects. The next step researchers take care of licensing to relevant parties.
2. Research Implementation Stage
   It is an activity carried out by researchers at the research site. At this stage, researchers conducted data collection in the field relating to the multiple intelligence profiles that appear in children. These data are obtained by observing all activities carried out by children and teachers during the learning process. Data was also obtained through interviews with teachers and parents.
3. Final Research Stage
   At this stage, the data obtained are analyzed carefully and thoroughly, arranged, categorized systematically and interpreted based on the experience, mindset, and perception of researchers. Based on these steps, an analysis decision is then made and finally, a report of the final results of the study and a conclusion is made.

RESULTS

Based on the research findings, the achievement of the overall indicator number from each aspect of intelligence can be described that some aspects of intelligence are touched well, but not evenly distributed in all aspects of intelligence. Intelligence achieved most dominant among other intelligence is verbal-linguistic intelligence. Quite dominant intelligence is logical-mathematical intelligence and intrapersonal intelligence. Then kinesthetic intelligence, musical intelligence, interpersonal intelligence, spatial-visual intelligence and the last is naturalist intelligence. Besides, all verbal-linguistic indicators and interpersonal indicators can be achieved. In logical-mathematical intelligence and musical intelligence, from each indicator totaling 9, there are 2 indicators are not revealed. In the kinesthetic intelligence of the 8 indicators used, only 1 indicator was not revealed. In visual-spatial intelligence, from 7 indicators used, there are 3 indicators are not revealed. In intrapersonal intelligence, of the 6 indicators used, only 1 indicator is not revealed. In naturalist intelligence, of the 6 indicators used, only 1 indicator can be revealed in this study. Based on the research findings above, it can also be seen the achievement of intelligence indicators of each subject/student. The picture can be seen in the following table.

Table 1. Multiple Intelligence Profile of Elementary School Students

Student's Name	Frequency of Intelligence Indicators Every Student							
	V-L	L-M	V-S	K	M	Inter	Intra	N
S1	121 evidences	17 evidences	7 evidences	10 evidences	15 evidences	16 evidences	31 evidences	2 evidences
S2	46 evidences	16 evidences	3 evidences	8 evidences	10 evidences	9 evidences	11 evidences	1 evidences
S3	34 evidences	12 evidences	0 evidence	8 evidences	8 evidences	10 evidences	8 evidences	1 evidences
S4	39 evidences	17 evidences	0 evidence	31 evidences	13 evidences	8 evidences	9 evidences	2 evidences
S5	48 evidences	10 evidences	24 evidences	12 evidences	8 evidences	2 evidences	17 evidences	0 evidence
S6	65 evidences	17 evidences	3 evidences	6 evidences	16 evidences	5 evidences	16 evidences	2 evidences

DISCUSSION

1. Profile Intelligence of Multiple Elementary Students

Based on the research findings it can be concluded that the intelligence that achieved quite dominant development was verbal-linguistic intelligence, whereas naturalist intelligence still needed stimulation or developmental efforts. This happens because the teacher gives more explanation verbally. The efforts made by the teacher are not in line with the principle of learning according to the theory of plural intelligence. According to plural intelligence theories (Gardner, 2013: 40), children learn in various ways. Therefore, teachers must combine various learning methods so that children can learn according to their needs.

Nevertheless, it can be concluded that the teacher has made efforts to stimulate the achievement of the child's multiple intelligences. This opinion is in line with the findings of research conducted by Gardner (Armstrong, 2004: 23) that according to the theory of plural intelligence everyone has all the intelligence, it's just that all of these intelligence works in different ways but together functioned peculiarly in yourself. In other words, each intelligence is the same and does not defeat each other. Every intelligence has its core mechanisms and principles. In general, anyone can develop every intelligence to an adequate level of mastery.

a. Verbal-Linguistic Intelligence Profile

Based on the research findings, in general students' verbal-linguistic intelligence has developed well and fairly evenly. This can be seen the achievement of verbal-linguistic intelligence indicators, namely: (1) S1 totaling 121 evidence; (2) S2 totaling 46 evidence; (3) S3 totaling 34 evidence; (4) S4 totaling 39 evidences; (5) S5 totaling 48 evidences; and (6) S6 totaling 65 evidences. In total there are 353 evidences. There are 12 indicators used, namely: (1) can respond appropriately to conversations of teachers or peers; (2)

easy to memorize message details such as names, places, dates, or small things; (3) has a relatively broad vocabulary for children his age; (4) have good listening skills; (5) able to tell a story correctly; (6) can tell a friend/other people about an event; (7) can answer simple questions; (8) can mention letters; (9) can read words correctly and easily; (10) can write well; (11) able to communicate verbally with others; and (12) able to mention difficult words.

The indicator with the most occurrence frequency is the 11th indicator that can communicate with others verbally. In each learning process, the teacher often communicates with students by asking questions and students can answer them correctly. This is supported by the results of interviews with teachers that the learning method used is learning in which there are questions and answers between teachers and students. I also found students communicate verbally with peers. With good communication skills, students can respond appropriately to conversations between teachers and peers. Some students have been able to arrange sentence by sentence in the form of simple stories. They also did not hesitate to express and tell their experiences in front of the teacher and his friends.

Besides, students have good listening skills. In almost every lesson, the teacher asks students to read a chain and the teacher randomly assigns students. Therefore, the ability to listen to students becomes honed. Besides speaking and reading, students can also write well. According to Armstrong (2004: 27), in learning activities in schools, it shows that this linguistic intelligence covers at least two-thirds of the teaching-learning interaction that includes reading and writing activities. In these two activities (reading and writing), there is a wide range of linguistic abilities because it includes spelling, vocabulary, and grammar. The findings in this study are in line with the results of Armstrong's research related to the application of verbal-linguistic intelligence in schools. Armstrong (2004: 34) states that children who are gifted in verbal-linguistic abilities have very developed hearing skills and enjoy playing with language sounds. They often think in words, have fun reading or are busy writing poetry or stories, spell words correctly and easily, enjoy listening to spoken words, have a broad vocabulary for children their age, and excel in school lessons involving read and or write. As for what needs to be considered in this intelligence is that there are many ways to express this intelligence in the lives of children. It may be that the child enjoys writing poetry, but is not good at expressing it in front of the class or the child is very good at telling stories but has difficulty when reading. Therefore, in developing verbal-linguistic intelligence in children must always pay attention to the direction of children's tendencies when showing their verbal-linguistic intelligence.

Furthermore, Armstrong (2004: 36) says that children learn by imitating and there is no

better way to get them to practice their verbal skills except by having them speak. In line with the opinion of Musfiroh (2004: 47) that the best way to motivate children with verbal-linguistic intelligence is to invite them to talk, provide a lot of books, recordings and create opportunities for writing. Activities like this will stimulate the child's verbal language skills. Children will get used to being involved in conversations, be it conversations with teachers, peers or with other adults. Children also have the opportunity to express their opinions and desires verbally without hesitation and fear.

The least indicator appears is the 12th indicator that can mention words that are difficult to pronounce. Based on the research findings during the learning process, researchers only found 2 pieces of evidence namely in S1 and S6 when they were able to say the word for the word in an English book in front of the class. However, it does not mean that other students are not able to mention relatively difficult words. It's just that when the learning process the teacher provides less stimulation.

The importance of developing verbal-linguistic intelligence is because children who are verbally intelligent will improve their ability to read and write, and will also have good listening skills (Susanto, 2005; Rachmy, 2006). In other words, people who are intelligent in speech tend to have perfect listening skills, making it possible to do their best in communication.

b. Logical-Mathematical Intelligence Profile

Based on the research findings, in general students' logical-mathematical intelligence has developed well and fairly evenly. This can be seen the achievement of logical-mathematical intelligence indicators in table 4.1.4, namely: (1) S1 totaling 17 evidence; (2) S2 totaling 16 evidence; (3) S3 totaling 12 evidence; (4) S4 totaling 17 evidence; (5) S5 totaling 10 evidence; and (6) S6 totaling 17 evidence. In total there are 89 evidence. There are 9 indicators used, namely: (1) able to sort numbers without error; (2) can connect the concept of numbers with symbol numbers; (3) can classify objects with the same properties (object color or size); (4) able to ask analytical questions; (5) can explain something logically; (6) can distinguish large-small, long-short, many-little; (7) able to solve problems simply; (8) asking about how things work; and (9) easily count numbers.

Of the 9 indicators used almost all indicators can be revealed and evenly distributed to each student. These indicators include the 1st, 2nd, 3rd and 10th indicators. In learning activities, especially when learning mathematics, the teacher always gives exercises that can reveal the achievement of logical-mathematical intelligence. According to Lwin et al. (2008: 43), children who have logical-mathematical intelligence are often attracted to numbers and patterns from a very young age. They enjoy

counting and quickly learn to add, subtract, multiply and divide. This is in line with what was stated by Gardner (2013: 85) that mathematical intelligence does involve a lot of mathematical calculation processes, numerical patterns, but components that involve reasoning, problem-solving, deductive reasoning, and logical thinking need to be stimulated.

Related to Gardner's opinion above, the next indicator is to be able to explain things logically. According to Suparno (2008: 45), the ability to think logically is very important because children gain mental discipline and learn to determine whether the flow of thought is valid or invalid. The opinions of these two experts are in line with the research findings that students have been able to explain things logically during the learning process. This was shown by S1, S2, S4, S5, and S6. It's just that there are 2 indicators that have not been revealed in this study, namely being able to ask questions that are analytical and ask questions about how things work.

Yet according to Gardner (2003: 87), children who have advantages in logical-mathematical intelligence, before entering adolescence, usually like to explore patterns, categories, and relationships, actively manipulating the environment and experimenting with various things using ways- controlled and orderly way. Talented children in this field constantly ask questions and are curious about everything, especially natural events. Based on observations, in the learning process teachers tend to put more emphasis on achieving the numeracy process (which relates to numbers). Therefore, no stimulation makes students interested in asking. According to Musfiroh (2004: 66), in general, the children's curiosity is high and has been able to ask "why" and "how".

c. Visual-Spatial Intelligence Profile

Associated with visual-spatial intelligence, according to Gardner (Efendi, 2005: 47) studies on intelligence are mostly conducted on adults, while research on children is still relatively small and limited. This is because testing of visual-spatial skills on children tends to be more difficult, their development also intuitively has not been honed in visual-spatial intelligence. Even based on research results, the majority of children are less interested in visual-spatial intelligence.

Based on the research findings, in general, the students' visual-spatial intelligence is not evenly distributed and efforts are still needed/stimulation for its development. This can be seen the achievement of visual-spatial intelligence indicators, namely: (1) S1 totaling 7 evidence; (2) S2 has 3 evidence; (3) S3 is 0 evident; (4) S4 is 0 evidence; (5) S5 totaling 24 evidence; and (6) S6 totaling 3 evidences. In total there are 37 evidence. There are 7 indicators used, namely: (1) can perform visual games such as puzzles, mazes, blocks, color games; (2) can show visual images clearly; (3) free up time by doodling or drawing; (4) can draw

something that is exactly the object; (5) can do the coloring work well; (6) it is easier to understand information through pictures than words; and (7) easy to distinguish between types of colors.

Based on observational findings, of the 7 indicators, 3 indicators have not been revealed, namely, indicators that can perform visual games such as puzzles, mazes, blocks, color games, which can show visual shadows clearly and more easily recognize information through images rather than words. That is because during the learning process the teacher does not provide stimulation. Besides, the learning methods used tend to be verbal, do not use visual media, and the like. The indicators that emerge because of the teacher's stimulation efforts are when students are asked to draw and color. Students do their jobs well. However, S3 and S4 did not go to school at the time. The next indicator is to fill leisure time by doodling or drawing. Achievement of this indicator is only seen in two students, namely S1 and S5. In S1, it only appears 2 times on different days. Whereas on S5, this indicator appears dominantly. Besides, the results of the picture are the same as the object.

It can be concluded, although overall the achievement of visual-spatial intelligence is not evenly distributed among each student, the emergence of the indicator is dominated by one student namely S5. This is also supported by data from interviews with S5 parents stating that since the age of 2 years, S5 has begun to be introduced with colored pencils and doodling on picture books. Then sharpened when entering kindergarten by participating in various drawing and coloring competitions until now. In line with what was expressed by the class teacher, that S5 has the most prominent ability in terms of drawing and coloring among classmates.

According to Piaget (Efendi, 2005: 51), the beginning of concrete/concrete operations at the beginning of school age marks the importance of a turning point in children's mental development. At this age, children are better able to actively manipulate images and objects in the spatial region, whose regular progress starts from the child's ability to move in space, then to the ability to make static mental images to the child's intelligence in manipulating these static images, and ultimately to the ability of adults to relate visual-spatial relations to proportional calculations. So in adulthood, the ability to appreciate all visual-spatial management can occur and develop into a geometric and scientific system. Besides, for children, high visual-spatial intelligence impresses creativity. The ability to create shapes, such as planes, houses, cars, suggests that there are elements of complex shape transformation. According to Armstrong (2004: 50), teachers can stimulate visual-spatial intelligence by providing various learning facilities that allow children to develop their imagination.

d. Kinesthetic Intelligence Profile

Based on the research findings, in general, the students' kinesthetic intelligence developed quite well although not evenly distributed. This can be seen from the achievement of kinesthetic intelligence indicators, namely: (1) S1 totaling 10 evidences; (2) S2 totaling 8 evidences; (3) S3 totaling 8 evidences; (4) S4 totaling 31 evidences; (5) S5 totaling 12 evidences; and (6) S6 totaling 6 evidences. In total there are 75 evidences. There are 8 indicators used, namely: (1) showing ability in the physical / sports field (stronger and more agile for children his age); (2) have good body coordination (balanced, flexible, and workmanlike); (3) able to kick, catch and throw properly; (4) tend to like to move, can not be quiet, tapping or restless when sitting somewhere; (5) can mimic the movements or behavior of others; (6) can do cutting, folding, sticking, and so on; (7) can join the rhythmic gymnastics, as well as play games and songs; and (8) tend to spend leisure time with outdoor activities.

Of the 8 indicators used, there is one indicator that has not been revealed, which can carry out cutting, folding, sticking, and so on. The absence of these indicators is due to the learning activities, the teacher does not stimulate. Indicators that are fairly evenly shown by students are having good body coordination (balanced, flexible, and workmanlike) and can follow the rhythmic gymnastics, as well as playing games and songs. This is seen when students do sports activities every Tuesday. Students look enthusiastic when participating in sports activities, playing rubber, running around, and not looking tired. The findings of the study are similar to those expressed by Lwin et.al (2008: 69) that children's fondness for exercising and performing various other physical movements due to children's self-energy is stored so much that it encourages them to always be active.

The next indicator is being able to kick, catch, and throw properly. Based on observations, the achievements of the two indicators are only shown by S4 and S5 when they play football. In addition, even though his body is fat, S4 seems more agile and stronger than his peers. The indicators tend to like to move, can not be quiet, tapping or restless when sitting long in a place, the achievements are shown by S4, S5, S6. On S5 and S6, each shows one evidence. Whereas in S4, this indicator appears most dominant. Besides, S4 also tends to like to spend spare time by doing activities in open space (field). This indicates that S4 tends to kinesthetic intelligence. Strengthened also by the results of interviews with parents/guardians of S4 who stated that S4 is indeed his son can not be "silent", even if at home he prefers to play in the yard. Besides, her daily activities after coming home from school are playing a bicycle, playing ball, swimming, or playing roller skates. The class teacher also stressed the same thing, that the S4 of their children tended to move.

Besides, almost every day before entering class, S4 must play soccer first.

These findings are in line with what was stated by Armstrong (2004a: 52) that children who have kinesthetic intelligence, usually excel in competitive sports in school or in a residential/home environment, move when sitting, engaging in physical activities such as swimming, biking, hiking, or skateboarding, need to touch something you want to learn, enjoy jumping, running, wrestling, or other similar activities. Furthermore, Gardner (Chatib, 2014: 91) asserts that someone who can use their entire body or at least only a part of the body, such as hands, feet, is a development of kinesthetic intelligence.

Basically, always active is the basic nature of almost all children. However, children with kinesthetic intelligence exhibit highly mobile nature. Even according to Armstrong (Musfiroh, 2004: 56), children with this type often get a label as a naughty child, and sometimes said to be a child Attention Deficit Hyperactive Disorder (ADHA). According to experts, the importance of developing kinesthetic intelligence is to improve psychomotor abilities, improve social skills, build self-confidence and self-esteem, and improve physical health.

e. Musical Intelligence Profile

Musical intelligence is seen as an ability related to music. Musical intelligence is the earliest growing intelligence and appears unexpectedly compared to other fields of human intelligence (Gardner, 2013:44). Musical intelligence can last into old age. Musical intelligence has a locus in the right part of the brain. The results showed that in essence every child was born with enough musical intelligence to achieve basic musical competence or ability to sing according to the keys and maintain the right beat. Nevertheless, Jasmine (2012: 103) states that this intelligence is the intelligence that is the least understood and supported in the academic environment. This conclusion is supported by the reality that children who hum, whistle, and sing at school are often seen as acting improperly and disturbing class peace. Whereas children who are labeled as trouble makers are showing behavior that reflects their musical intelligence. Music has a huge influence on the development of mathematical and scientific abilities in a child. Students in a vocal school, whose majority curriculum is in the arts and sound, apparently show high ability in the field of mathematics. Many researchers believe that the abilities in the fields of mathematics and science develop because students have been trained to manipulate sound tones, tempo, rhythm, and understand the relationship between music symbols or notation since childhood. Even when surveyed in seventeen countries on the ability of students in the field of science, aged fourteen, it was found that children from the Netherlands, Japan, and Hungary have the highest achievements in the world. When examined more deeply it

turned out that these three countries included elements of art and music intensively in their curriculum (Gunawan, 2006: 236).

Based on research findings, in general, musical intelligence develops quite well although not evenly distributed. This can be seen the achievement of musical intelligence indicators, namely: (1) S1 totaling 15 evidences; (2) S2 totaling 10 evidences; (3) S3 totaling 8 evidence; (4) S4 totaling 13; (5) S5 totaling 8 evidences; and (6) S6 totaling 16 evidences. The total is 70 evidences. There are 9 indicators used, namely: (1) can sound or mimic the tone; (2) can sing, hum, or whistle; (3) tend to memorize songs quickly; (4) able to move the body to the rhythm; (5) can clap to follow or form a rhythm; (6) able to play an instrument; (7) singing a song he has mastered; (8) tapping on the table while doing something; and (9) enthusiastic about singing both individually and in groups. One indicator shown by students is to be able to sing, hum or whistle. When learning, almost twice a week, students do the brushing together. Shortly before brushing teeth, students are accustomed to the teacher to sing first. Besides, in learning, the teacher simply provides stimulation to students, when the teacher teaches about the tone and asks students to sound it. The teacher also provides an opportunity for students to sing the songs they master/memorize in front of the class in turn. Whether singing individually or in groups, students look enthusiastic. This is in line with what was expressed by Gardner (2013: 46) that all children are musical, born with the capacity to sing and compose music. Furthermore, Musfiroh (2004: 53) mentions that almost all children have musical intelligence. With the right stimulation, children's musical abilities will be honed and developed. The findings in the study also showed the same thing, that when the teacher stimulates musical intelligence, students can show the achievement of musical intelligence indicators quite well. The indicators that have not been revealed are the 4th and 6th indicators, which tend to memorize songs quickly and can play musical instruments. Based on observations, the two indicators are not visible because the teacher does not provide stimulation. In the learning process, the teacher does not facilitate students to play musical instruments and does not ask students to memorize songs.

f. Interpersonal Intelligence Profile

Gardner (2013: 45) states interpersonal intelligence as the ability to understand and be sensitive to the feelings, intentions, motivation, character, and temperament of others, sensitivity to facial expressions, sounds, and other people's cues. Based on research findings, in general, interpersonal intelligence develops quite well evenly. This can be seen from the achievement of interpersonal intelligence indicators, namely: (1) S1 totaling 16 evidences; (2) S2 totaling 9 evidences; (3) S3 totaling 10 evidences; (4) S4 totaling 110 evidences; (5) S5 totaling 2 evidences; and (6) S6

totaling 5 evidences. The total totals 50 evidence. There are 6 indicators used in this study, namely: (1) easy to share and like to give assistance; (2) can work together; (3) can communicate desires to others; (4) can organize his friends; (5) socializing with peers; and (6) gifted as a leader.

Based on observations, the dominant indicator that appears is socializing with peers. This can be seen when students do various kinds of games with their friends during breaks (even in class), then when learning takes place in the hall and are combined with classes 2B and 2C, they can blend. The findings are similar to what was revealed by Suparno (2008: 40) that students who have interpersonal intelligence are easy to get along with and make friends. Even as a new person in a class or school, he can quickly enter the group, and if released alone, he will easily make friends. The ability to socialize and socialize which is one of the characteristics of interpersonal intelligence becomes very important because it will make the child liked by his friends. Besides, with good social skills, children develop into humans who have a concern for the surrounding environment. According to Lwin et al. (2008: 198), it is important to develop interpersonal intelligence since childhood because people with low interpersonal intelligence tend to be insensitive, uncaring, selfish and offensive to others. For this reason, so that children develop into people with high social abilities, they must be accustomed to having relationships with their peers. Children must be involved in shared games, collaboration, chatting together, and so on. By having interpersonal intelligence, one can understand others well. This understanding makes it easy for someone to place themselves in the community so that one day has a wide network to develop their lives.

Other indicators that appear when the learning process is easy to share and like to give help. S1, S2, S3, and S4 that offer food to both friends and teachers at different times. Then at other times, S1, S2, and S6 fill in the classroom grades. The indicators that appear to be stimulated by the teacher can work together. On several occasions, for example, when distributing toothbrushes, the teacher asks students to be orderly, queue up and wait their turn.

Another feature of interpersonal intelligence is having an organization of his friends. Children who are good at organizing their friends are children who have leadership potential. Based on research findings, children who have the potential to become leaders among their peers are S1 and S4. When doing some S1 games seem to set the course of the game. When playing football, S4 volunteered to be a captain and his friends immediately agreed. Also seen S4 adjusts the standing position of friends when playing ball on the field.

Given the importance of this intelligence in one's life, then this intelligence must get attention by providing stimulation to

develop optimally. According to Isenberg and Jalongo (Armstrong, 2004: 55), some stimulation that can be done to stimulate interpersonal intelligence are: (1) practicing communication skills both verbally and nonverbally; (2) responding to the feelings of peers in addition to waiting for their turn and sharing material and experiences; (3) experimenting with roles at home, school and community by establishing contact with the needs and desires of others; and (4) try to see the other person's point of view. When children come into contact with conflicts about space, time, material and rules, they develop positive conflict resolution strategies.

g. Intrapersonal Intelligence Profile

Based on research findings, in general, intrapersonal intelligence develops quite well although not evenly distributed. It can be seen the achievement of interpersonal intelligence indicators, namely: (1) S1 totaling 31 evidences; (2) S2 totaling 11 evidences; (3) S3 totaling 8 evidences; (4) S4 totaling 9 evidences; (5) S5 totaling 17 evidences; and (6) S6 totaling 5 evidences. The total 92 evidences. There are 6 indicators used in this study, namely: (1) showing an independent attitude; (2) able to mention what will be done tomorrow; (3) show unyielding attitude towards something that has not succeeded/finished; (4) shows an enthusiastic attitude in doing something he likes; (5) able to show mood/feeling well; and (6) showing an attitude of confidence in yourself.

Based on observations, the most frequently occurring indicator is showing confidence. This appears evenly distributed to each student. Seen when the teacher asks questions, they raise their hands, dare to answer, not ashamed to the front of the class to tell stories, and do the questions themselves (not cheating), both in S1, S2, S3, S4, S5, and S6. In these findings, there are efforts from teachers who stimulate students. The indicators show an independent attitude, it appears from S1 and S2 which by itself will wash their hands both before and after eating. Then when working on the assigned math problem exercises, even though there were no teachers, they completed the task well. The next indicator is being able to show feelings/moods well, it appears when S1 and S3 say thank you for being helped to open their drink bottles. Then when S5 and S4 express an apology as an expression of guilt when accidentally making friends cry. Besides, it is often seen when asked to do assignments, either writing or arithmetic, S1 and S2 always seem to be the first to complete the work.

These findings are in line with those presented by Armstrong (Gardner, 2013: 49) that children who develop intrapersonal intelligence tend to perform well in school, especially if class activities are based on projects that are done alone, self-study, and other activities which are based on the speed of each

individual. Besides, in learning activities, good communication between teachers and students is needed to help develop intrapersonal intelligence. Should, the use and recognition of children's learning styles need to be considered, so that children with intrapersonal intelligence can learn as they wish.

According to Chatib (2012: 96), geneticists believe that when born into the world, one's intrapersonal intelligence has developed from a genetic combination. However, experience and the environment ultimately determine the quality of intrapersonal intelligence. Intrapersonal intelligence can be built by the interaction of social relationships and the environment so that it enriches one's personal experience. Thus, intrapersonal and interpersonal intelligence are interdependent.

h. Naturalist Intelligence Profile

Based on research findings, in general, naturalist intelligence still needs efforts/stimulation for its development. This can be seen from the achievement indicators of naturalist intelligence, namely: 1) talking/telling a lot about pets or favorite natural locations; (2) likes/is interested in observing natural phenomena; (3) have ecological awareness; (4) likes/is interested in observing leaves, insects, and the like; (5) can explain various matters related to flora and fauna; (6) reprimanding/advising friends who behave negatively towards animals and nature.

Naturalist intelligence according to Gardner (2013: 50) is intelligence that is related to knowledge, understanding, skills, and respect for the surrounding environment, animals and plants, such as how to utilize the natural surroundings, and is very concerned about changes in the surrounding environment. In general, naturalist intelligence is characterized by the ability to recognize, distinguish, express and categorize what is found in nature and the environment.

Of the 6 indicators used in the study, only 1 indicator that appears, namely indicators have ecological awareness. Based on observations, the indicator appears when S1, S3, S4, and S6 dispose of waste in its place. The frequency of appearance is not repeated. This could be due to students rarely eating snacks outside the classroom, in the sense that the classroom teacher does require students to bring food from home and forbid students to eat snacks outside during recess. The teacher's efforts are seen to stimulate this ecological awareness when students are asked to do the Garbage Collection Movement (GPS) around the school environment/yard. Students also seemed enthusiastic about doing it.

Meanwhile, indicators 1, 2, 4, 5 and 6 are still not revealed. These indicators tend to emerge and be stimulated if the teacher does activities outside the classroom/open air. For example, doing gardening activities in schools, field trips both periodically and evidently, and so on. This

is in line with what was stated by Gardner (Chatib, 2014: 100) that the sign realized, if the child is active in the open, can have a positive effect on the development of naturalist intelligence. As for the second indicator, at one learning meeting, the teacher looks to try to stimulate students by assigning clippings about phenomena/natural disasters, even though only the stages of introducing them to students have not yet raised student interest in natural phenomena. According to Armstrong (2011: 158), usually elementary school-age children have crystallized experiences, experiences that grip them in curiosity, one of which is about the universe. Furthermore, Armstrong (2011: 160) suggests that basically, every living thing has naturalist intelligence.

2. Factors that Affect Intelligence

Based on observations during the study, according to researchers the dominant factor influencing the achievement of indicators of every aspect of intelligence in each student when the learning process in the classroom is the environmental factor, in this case, the method of learning/activeness of the teacher. Based on the findings, it can be seen that almost every achievement indicator of each intelligence that is raised by students, in general, is the result of stimulation from the teacher, whether realized or not realized by the teacher. The potential for intelligence that emerges does not stand alone. For example, as previously mentioned, when students raise their hands and answer questions from the teacher. The students' attitudes if analyzed, can bring up intrapersonal intelligence (showing self-confidence), then verbal-linguistic intelligence (can respond to teacher conversations correctly, can answer questions, able to communicate with others verbally) and logical-mathematical intelligence (able to explain something logically). Or when the child performs a dance move/follows the rhythm of the song, in addition to musical intelligence indicators, the activity also raises kinesthetic intelligence indicators. This is in line with what was delivered by Armstrong (Chatib, 2014: 91) that the indicators of each intelligence are different but cooperate in almost every activity of the child. Armstrong further gave an example, when children can to draw intelligently (visual-spatial intelligence), automatically indicators of kinesthetic intelligence also work; finger movements to produce a beautiful painting.

On the other hand, the teacher's learning method, which almost every day carries out activities in the classroom and provides oral instruction, is less able to bring out students' naturalist intelligence. The learning should not only be monotonous in the classroom, but students can learn in the open, through the process of observation of nature and the environment. Besides, learning media used by teachers should be more varied. For example, by providing rough or soft

devices that attract the attention of children to each area of intelligence, both in terms of materials, ways of use or benefits that will be felt by children.

For learning to be more effective and efficient, teachers must also understand the characteristics of each student's learning style, for example, S5, which tends to have a visual learning style, S4, which tends to have a kinesthetic learning style. Learning style is not a person's ability, but a method chosen by someone to use their abilities.

During observations made during the learning process, it was found that there are children who have been seen to tends certain intelligence. After being analyzed, it turns out in the case revealed that parenting patterns also influence the achievement of the potential for multiple intelligences. That means, the emergence of the children's intelligence potential is not solely the result of teacher stimulation when learning in the classroom, but there is an influence of parenting factors.

These findings are in line with what was stated by Armstrong (Musfiroh, 2004: 62) that genetic factors and environmental factors affect one's intelligence. Based on the research findings, the researcher concludes that in the context of formal education, in the end, both factors lead to the school. The discovery of student intelligence is the moral responsibility of the school. The role of the school should be like a search for students' interests, talents, and intelligence powers. As the differences in the genetic patterns of each student, then the differences in the appearance of student intelligence are different from each other. Thus, there are many ways to get smart and also lots of signs to see students' intelligence.

Every time in our lives are events and are different for each individual who experiences it. The incident gave rise to experience and social interaction, among others in the form of the moment of the emergence of the power of one's intelligence. If drawn to the school area, in this case, elementary school, the momentum of the emergence of each student's intelligence must be recorded, recorded, facilitated, stimulated, stimulated, then valued in learning activities. Another fact obtained from observations is that intelligence is not only cognitive, but also psychomotor, and effective.

CONCLUSION

The meaning obtained from the results of this study is an empirical picture of the potential intelligence profile of multiple elementary students and the factors that influence it. The research findings regarding these two problems, after being analyzed, produce the following conclusions.

Multiple intelligences of elementary school students grade 2 in each dimension of intelligence is at a fairly good level of development although not yet evenly distributed to all students. This can be seen from the emergence of indicators that

characterize each dimension of intelligence. Some dimensions of intelligence have been touched quite well, but have not been evenly distributed in all dimensions of intelligence. Intelligence with fairly dominant developments is verbal-linguistic intelligence, mathematical logical intelligence, and kinesthetic intelligence. The next intelligence that develops is intrapersonal intelligence, musical intelligence, and interpersonal intelligence. Visual-spatial intelligence and naturalist intelligence still need stimulation or development efforts.

1. The intelligence that is raised by the six students is dynamic, in the sense that the six students can to explore, grow, and develop intelligence. Although there are students who do not bring up the potential for visual-spatial and naturalist intelligence, it does not mean that intelligence does not exist in students or students are considered "weak". This is due to less optimal stimulation efforts from the teacher.
2. The six students studied have a variation of their intelligence potential. Some have raised a dominant intelligence potential, namely S4 in the kinesthetic intelligence dimension, S5 in the visual-spatial intelligence dimension, and S6 in the musical intelligence dimension. There is also the emergence of four dominant intelligence potentials namely S1 in the dimensions of verbal-linguistic intelligence, musical intelligence, interpersonal intelligence, and intrapersonal intelligence.
3. The factors that can influence the emergence of the potential of multiple grade students' intelligence during the learning process are stimulation factors from the environment, in this case, the activeness of the teacher and the methods and learning media used. Besides, based on the results of interviews, parental intervention can influence the emergence of the potential for multiple intelligences.

REFERENCES

Armstrong, T. (2004). *Menerapkan multiple intelligences di sekolah, terjemahan Yudhi Murtanto*. Bandung: PT. Mizan Pustaka.

Armstrong, T. (2004). *Sekolah para juara: menerapkan multiple intelligences di dunia pendidikan*. Bandung: Kaifa.

Armstrong, T. (2011). *The best schools*. Bandung: Kaifa.

Armstrong, T. (2013). *Multiple intelligences in the classroom third editio*n. Alexandria: Association for Supervision and Curriculum Development (ASCD).

Özdemir, B. (2010). Determining multiple intelligences pre-school children (4-6 age) in learning process, 2(2), 2473–2480. https://doi.org/10.1016/j.sbspro.2010.03.356.

Bowles, T. (2014). Self-rated Estimates of Multiple Intelligences Based on Approaches to Self-rated Estimates of Multiple Intelligences Based on Approaches to Learning. *Australian Journal of Educational & Developmental Psychology*. Vol 8, 2008, pp 15-26. https://www.researchgate.net/publication/228485374.

Chatib, M. (2012). *Sekolah anak-anak juara*. Bandung: Kaifa.

Chatib, M. (2014). *Orangtuanya manusia*. Bandung: Kaifa.

Chatib, M. (2014). *Sekolahnya manusia*. Bandung: Kaifa.

Chatib, M. (2014). *Kelasnya manusia*. Bandung: Kaifa.

Creswell, J. (2012). *Educational research*. Boston: Pearson.

Efendi, A. (2005). *Revolusi kecerdasan abad 21*. Bandung: Alfabeta.

Ehrlinger, J., Mitchum, A. L., & Dweck, C. S. (2016). Understanding overconfidence: Theories of intelligence, preferential attention, and distorted self-assessment. *Journal of Experimental Social Psychology*. https://doi.org/10.1016/j.jesp.2015.11.001.

Elliott, S. *et al*. (2004). *Educational psychology effective learning*. New York: McGraw Hill.

Fonseca-mora, C., & Arnold, J. (2004). Multiple Intelligence Theory and Foreign Language Learning: A Brain-Based Perspective. *IJES*, vol. 4 (I), 2004, pp. 119-136. https://doi.org/10.6018/ijes.4.1.48141.

Gardner, H. (2003a). *Frames of mind the theory of multiple intelligences*. New York: Basic Books A Member of The Perseus Books Group.

Gardner, H. (2013). *Multiple intelligences*. Jakarta: Daras Books.

Gunawan, A. (2006). *Genius learning strategy*. Jakarta: PT. Gramedia Pustaka Utama.

Hurlock, E. (2012). *Psikologi perkembangan*. Jakarta: Erlangga.

Jasmine, J. (2012). *Metode mengajar multiple intelligences.* Bandung: Nuansa Cendikia.

Kartadinata, S. (2008). *Rambu-rambu penyelenggaraan bimbingan dan konseling dalam jalur pendidikan*. Jakarta: Dirjen PMPTK DEPDIKNAS.

Lwin, M. et.al. (2008). *How to multiply your child's intelligence (Cara Mengembangkan berbagai Kecerdasan)*. Yogyakarta: PT Indeks.

Megawangi, R. (2004). *Pendidikan yang patut dan menyenangkan*. Jakarta: Visacom Pratama.

Mohamed, A., & Ghraibeh, A. (2016). Brain Based Learning and Its Relation with Multiple Intelligences. *International Journal of Psychological Studies*. Vol. 4, No. 1; March 2012. https://doi.org/10.5539/ijps.v4n1p103. www.ccsenet.org/ijps.

Musfiroh, T. (2004). *Bermain sambil belajar dan mengasah kecerdasan*. Jakarta: Direktorat Pembinaan Pendidikan Tenaga Kependidikan dan Ketenagaan Perguruan Tinggi.

Nurihsan, J. (2003). *Dasar-dasar bimbingan dan konseling*. Bandung: Mutiara.

Palmer, A.J. ed. (2003). *50 pemikir pendidikan; dari piaget sampai sekarang*. (Terjemahan Farid Assifa). Yogyakarta: Jendela.

Rachmy, D. (2006). Menghidupkan keberbakatan dan kreativitas anak. *Jurnal Psikologi Universitas Diponegoro*. 3(2).

Santrock, J.W. (2012). *Life-span development*. Jakarta: Erlangga.

Suparno, P. (2008). *Teori kecerdasan jamak dan aplikasinya di sekolah: cara menerapkan teori multiple intelligences howard gardner*. Yogyakarta: Kanisius.

Surya, M. (2004). *Psikologi pembelajaran dan pengajaran*. Bandung: Pustaka Bani Quraisy.

Susanto, H. (2005). Penerapan multiple intelligences dalam sistem pembelajaran. *Jurnal Pendidikan Penabur*. 4(4).

Todor, I. (2014). Investigating "The Old Stereotype "about Boys/Girls and Mathematics: Gender Differences in Implicit Theory of Intelligence and Mathematics Self-Efficacy Beliefs. *Procedia - Social and Behavioral Sciences,* 159, 319–323. https://doi.org/10.1016/j.sbspro.2014.12.380.