

Improving Teachers' Effectiveness in developing 5-6 Years Old Children's Multiple Intelligences based on Holistic Integrative Instructional Approach

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Abstract

This research is aimed to empower teachers' effectiveness in improving the young children's development based on multiple intelligence development through the holistic integrative instructional approach. The research is mix method research, in which, the research implements quantitative and qualitative research methodologies. The mix method research is applied in the form of action research, particularly, Martini Jamaris's Action Research Model. The research participants are 4 kindergarten teachers and 19 kindergarten children, aged 5-6 years old.. The empowerment of the teachers' knowledge and skill in enhancing the 5-6 years old multiple intelligence is decided by the effectiveness the teacher in implementing the holistic integrative instructional aimed to increase of the children's multiple intelligence development. The result of the research revealed that the multiple intelligence of the 19 children are improved significantly. It can be analysed from the difference between their score on pre- assessment or before the holistic integrative instructional approach are applied, in which, the multiple intelligence score of the children is in average about 94.88 and their score on post-assessment, in which, is in average about 111.41. Therefore, the children multiple intelligences are increased about 85.16 %.

Keywords: *Improving, teachers' effectiveness, holistic integrative instructional approach, multiple intelligences, integrated learning, mix method research*

1. Introduction

Teachers of early childhood education play important role in empowering development of the early age children, especially, the early aged children who are in speedily developed. Therefore, the teachers of early aged children as well as, the teachers of kindergarten are required to have knowledge and skills, as well as, the ability to blend the two of them in the form of designing and implementing learning programs for the early aged children effectively particular, learning program which are focused on multiple intelligences and based on holistic integrative instructional approach. In reality not all the teachers have all the requirements needed in designing and implementing learning programs which based on the holistic integrative instructional approach in which the approach are able to empower the early age children development.

Recent conference about essential competencies for effective teaching have focused on *21st century skills* (AECT, 2010), in which, come to conclusion that teachers must to improve their knowledge and skills in learners in order to prepare the young children for an increasingly complex society. These skills include critical thinking and

problem solving, communication, collaboration, and creativity, each of which is recognized both essential and universal across the birth-to-grade 12 developmental continuum (Heinike, Kennedy & Lee, 2014, Vol 15 No 2). AACTE (2010) stated these competencies as critical not only to teaching, but to the continued effectiveness of teacher education programs as well.

Prior studies, which have been done by the researcher through observation and interview, indicate that most of early childhood education teachers, especially, in rural areas are not aware of the important of the instructional approach in empowering the early aged developmental. It is because they most of them are voluntary and untrained early childhood education teachers or kindergarten teachers.

Based on the above considerations, this research is aimed to empower teachers, effectiveness in improving development of the early aged children, especially, the 5-6 years old children's multiple intelligences based on holistic integrative instructional approach. This research is related to the prior research which done by the researchers on multiple intelligences of the 4-6 years old children (see : Martini Jamaris & Edwita, 2014, Vol. 2, No. 12, 1164-117 and 2015, Vol. 3, No. 4, 427-438)

Cross Theories Analysis

In accordance to the analysis and synthesis of various theories concerning with child development and multiple intelligences, among them are: Gardner (1993: 67-68), Piaget (1974) which cited by Papalia & Olds, 1986: 420, 1995: 212-224 and Martini Jamaris (2004: 5) Santrock (1996: 338-395), Papalia & Olds (1985: 425-486), Fogarty (1991: 53-62), Drake (119-131), it can be concluded that the development of multiple intelligences are going side by side with the development of child's development in the field of psychosocial, cognitive, language and communication, physical and motoric coordination and visual motoric coordination (Martini Jamaris, 2005: 12). Furthermore, it can be seen from the accent of multiple intelligences theories which describes that multiple intelligences talk about ways of human being to be clever, in which, they consist of eight types of intelligence, they are:

(1) verbal linguistic intelligence, (2) logical mathematical intelligence, (3) visual spatial intelligence, (4) intrapersonal intelligence, (5) interpersonal intelligence, (6) bodily kinesthetic intelligence, (7) musicrythmic intelligence, and (8) naturalistic intelligence.

Verbal linguistic intelligence deals with words and language both spoken and written. Furthermore, the verbal/linguistic intelligence is also appeared in form of abilities to use words effectively, either verbally or non verbally, which are included, the ability to manipulate syntax and language structure, phonology, or the verbal/sound of language, semantic or the meaning of words, and the practical used of language (Gardner, 1993: 76-79, Pohl, 2000: 49, Fogarty, 1991: 67). The indications of the existence of verbal/linguistic intelligence of the early aged children are (1) enjoy speaking, (2) enjoy reading and writing, (3) enjoy listening and (4) and deliver story, enjoy playing with words, etc (Martini Jamaris, 2013: 25-26).

Logical mathematical intelligence is a type of multiple intelligences deals with inductive and deductive thinking. The existence of the type of intelligence can be seen from the ability of the young children in making categorization, making classification, making inference and generalization, as well as, calculating and numeric ability, finding patterns and testing hypothesis (Gardner, 1993: 157-159, Pohl, 2000: 49, Fogarty, 1991: 67). Furthermore, Martini Jamaris (2013: 28) described that logical mathematical intelligence can be identified by the ability in: (1) classifying objects, events, and people, (2) arranging objects and events based their order / hierarchy (3) making explanation logically and rationally, (4) remembering numbers up to 10 easily, (5) calculating numbers up to 10 easily, (6) understanding cause and effect relationships, (7) finding patterns of objects and events, (9) understanding subtraction (- +) process up to 10 easily.

Intelligence deals with the sense of sight and ability to visualize, include to create mental image, into patterns, picture, building design is known by visual spatial intelligence (Gardner, 1993: 174-175, Pohl 2000: 46, Fogarty 191: 67. Glass & Holyoak, 1986: 140). Visual-spatial intelligence development of the early aged children develop along with their ability in integrating visual perception activities with their cognitive process, as well as, the ability to transfer the two into the form of lines, colors, shapes, sizes, width and the relationship among those aspects, in which, the process involves the visualization ability which express ideas and visual spatial relationship in the form of matrices and graphics (Martini Jamaris, 2005: 188).

Intrapersonal intelligence is a type of multiple intelligence has to do with self-reflection and metacognition awareness of internal state of being which involves some aspects, as followed: (1) awareness of self feeling, (2) awareness of self strength and self weakness, (3) self attention, (4) self motivation, (5) self temperament, and (6) self aspiration, as well as, (7) ability of doing self discipline, (8) self understanding and (9) self confidence (Gardner, 1993: 237-249, Pohl, 2000: 49, Fogarty, 1991: 67).

Interpersonal intelligence refers to person to person relationship and communication. The appearance of this kind of intelligence can be identified by: (1) the ability in initiating communication with others, (2) ability in doing activities cooperatively, (3) liked by others around them, (4) the ability in doing activities in team work (Gardner, 1993: 237-249, Pohl, 2000: 49, Fogarty, 1991: 67). Furthermore, interpersonal intelligence involves the ability in differentiating and perceiving various modes, certain objective, motivation and feeling of other persons. This kind of intelligence also involves the ability in interpreting face expression, sound and body movement of others (Martini Jamaris, 2013: 28). Therefore, the persons are able in doing interaction effectively with others, such as, to convince others to do something or to lead other toward the intended goal.

Bodily-kinesthetic intelligence deals with physical movement. According to Seefeldt & Babaour (1994) as cited by Martini Jamaris (2003: 47) the kindergarten children are already able to coordinate their body movement well, which involves gross motor and fine motor movements. Therefore, it can be concluded that the bodily-kinesthetic intelligence of the kindergarten can be identified by their abilities in: (1) riding tree wheel cycles or two wheel cycles, (2) running and suddenly stop, (3) climbing, (4) hopping with one foot and two feet, (5) jumping, (6) standing balance on one foot, (7) walking on bridge or block balance, etc. The kindergarten children movement in fine motor movement can be identified by their abilities in: (1) put on and put off dress; put on and put off dress' buttons, (2) holding paper while another hand writing, (3) folding papers into object shape, (4) cutting thing by using knife or other tools (5) taking small thing by using finger edge, (6) using

spond and fork for eating, and the like (Martini Jamaris, 2013:29).

Musical /Rhythmic intelligence involves the ability in recognizing tonal pattern of sounds, rhythmic and beats. The development of musical-rhythmics intelligence of the kindergartenchildren is the result of development integration in the field of cognitive development , physical development , psychosocial development , language and communication development (Martini Jamaris, 2005: 183) . The kindergartenchildren enjoy listening to the music and other form of arts. Therefore, they are able to express their musical-rhythmic intelligence through various activities related to the intelligence expressions.

Musical-rhythmic intelligence of the kindergarten or other young aged children can be identified by their overt behavior, as followed : (1) remember rhythmic and melody easily, (2) able to match movement to the sound of music and melody, (3) enjoy playing music instruments, (4) able to create rhythmic, (5) enjoy listening to the music (Martini Jamaris, 2013:35)

Naturalistic intelligence relates to the knowing that occurs through encounter natural world which involves appreciation for understanding of various flora and fauna, recognition of species membership, ability to relate to living organism. the naturalist intelligence of theearly aged children can be identified through their overt behaviors to the environment, such as, (a) enjoy doing environmental concervation, (2) awareness of ecological problems , (3) awareness to natural phenomenas, and (4) enjoy doing natural obseravation (Martini Jamaris, 2013: 36).

To develop multiple intelligences, people need to decide educational approach which matched to the of the early aged children. The educational approach has to put into action of learning. Judging from the developmental characteristics of the children which are processes holistically or interactively, therefore, the holistic integrative instructional approach which done through play activities is suitable to accommodate the need of the children in developing their multiple intelligences.

Research Method

This research used mix method research which applied in the form of action research which was divided into 2 stages, they were: (1) pre research activities which focused on improving kindegarten teachers' abilities in designing and implementing integrated learning to impower the early aged children's multiple intelligences. The pre-research was participated by 4 teachers; (2) research activities which is participated by 19 children from kindergarten schools in East Jakarta Indonesia.

Based on the need in developing multiple intelligences of the kindergarten children, therefore, the research questions were formulated as followed : (1) how to empower kindergarten teachers, effectiveness in improving the 5-6 years old children's multiple intelligences, (2) Does the holistic integrative instructional

approach improve the kindergarten teachers effectiveness in enhancing the 5-6 years old children's multiple intelligences? Do the 5-6 years old children multiple intelligences improve after participating the holistic integrative instructional approach learning process?

Research method used in this study is designed based on the research questions that had been formulated previously, in which, they contained two kinds of research methods, they were quantitative research method and qualitative research method. Therefore, the research methods used in this study is mix method. Qualitative method is used to study the role of the implementation of integrated learning design on development of the early aged children's multiple intelligences. Therefore, observation guide, interview and documentation are used to record the children's multiple intelligences development. Quantitative method used in order to measure the increase or the intensify of the children's multiple intelligence. Consequently, pre assessment and post assessment is applied before and after the implementation of the holistic integrative instructional approach learning process. Implementation of the mix method research is in the form of action research.

The action research used is Martini Jamaris Action Research Model Martini Jamaris 2011 : 51, Martini Jamaris & Edwita, 2014 and 2015) which constructed based on , Kemmish and Tagartaction research model, as well as, Bachman's action research spiral.

The Assessment of the Early Aged Children Multiple Intelligences

Assessment of the early aged children multiple intelligences are conducted twice, pre-assessment and post assessment. Pre -assessment was aimed to get information about the existing multiple intelligences of the kindergarten children before participating the integrated learning design implementation, while post assessment was conducted in order to know the increase or the growth of their multiple intelligences after participating the integrated learning design implementation. Both pre and post assessments used the valid and reliable multiple intelligences instruments assessment which have been developed by researcher before doing this study.

Specification of the pre and post instrument assesment of multiple intelligences of the kindergartenchildren was the form of *nominal or categorical scales* which aimed to record *behavioral responce* which matched to *categorical scale*(Craswell, 2008:175) . Therefore, the instrumen of assessment used four categories, as followed: (1) Far bellow average, (2) Below average ,(3) Average, (4) Above average, (5) Far above average

Research Participants

Since the research is aimed to improve kindergarten teachers, especially, the kindergarten teachers of the 5-6

years old children effectiveness in empowering the children multiple intelligences, therefore, participants of the research are divided into two groups. They are teachers group and the 5-6 years old group. The reason underlined the group division is because before doing the holistic integrative instructional approach process the teachers have to be trained. Therefore, the training results have to be recorded. Furthermore, the teachers concerned have to implement their competences in applying holistic integrative instructional approach process to improve the 5-6 years old children multiple intelligences. Consequently, the 5-6 years old children are counted as research participants. On the top of that the teachers 'effectiveness to empower the children multiple intelligences are known by the children multiple intelligences improvements.

There are 4 teachers actively participate in this study, 19 children of 5-6 years old involve actively in this research. Therefore, the study are participated by 23 participants.

Research Procedures

Since this research aimed to improve the 5-6 years old children, as well as, kindergarten teachers effectiveness in improving the children multiple intelligences by applying the holistic integrative instructional approach, therefore, the research procedure are divided in two stages, they are ; (1) prior research stage, in which, the teachers are trained in order improve their knowledge and skills in implementing the holistic integrative instructional approach, (2) research stage, in which, the teachers implement their knowledge and skills in conducting the holistic integrative instructional approach aimed to improve the 5-6 years old multiple intelligences

Prior Research Stage

The prior research stage is focused on building the 5-6 years old teacher knowledge and skills on holistic integrative instructional approach to improve the 5-6 years old multiple intelligences. These activities come out with the teacher competencies in designing and implementing the holistic integrative instructional approach aimed to improve the children multiple intelligences. In this stage, the teachers understanding in crafting and joining multiple intelligences and holistic integrative instructional approach are developed. For the purpose of the effectiveness of research activities, the holistic integrative instructional design and learning material use the design and learning material which have been developed in the previous research (Martini Jamaris and Edwita, 2015, Vol 3, No 4) .

Assessment of Teachers Knowledge and Skill

In order to know the training effectiveness, therefore, before training take place, the knowledge and skill of the

kindergarten teacher s about holistic integrative instructional approach and multiple intelligences are assess. The assessments are conducted qualitatively, in which, the teachers are interviewed. Some questions asked to the teachers during interview are as followed: (1) Do you know about holistic integrative instructional approach? (2) Do you know about multiple intelligences?, (3) Can you design instructional process based on multiple intelligences? (3) Can you design instructional process based on the holistic integrative instructional approach design and multiple intelligences?

The result of the qualitative assessment reveals that most the teachers are not familiar with the holistic integrative instructional approach and process. Furthermore, they have limited knowledge about multiple intelligences, especially, applying them in the holistic integrative instructional approach and process.

Develop Teachers Knowledge and Skills in Designing the Holistic Integrative Approach based on Multiple Intelligences Crafting

Both of the holistic integrative instructional approach design and learning process and learning materials are built based on the result of analysis of instructional system, in which, the system at least consists of instructional objectives, instructional contents, instructional processes, and instructional evaluation (Dick and Carry, 1985:31), as well as, model of integrated curriculum (Fogarty, 1991:53) and Martini Jamaris (2005:21) led the researcher to construct the holistic integrative instructional approach design and based on multiple intelligences crafting. The holistic integrative instructional design which are used to develop multiple intelligences of the kindergarten children are selected carefully, which aimed to match the need of the children. A long with the requirement of the holistic integrative instructional approach, in which, the researchers modify Fogarty's webbed model (191:52-60) and Collins and Hazel (1991, therefore, the learning contents are design in the forms of a theme. The learning theme used during the learning process and activities is dealing with environment, entitled **Me and My Environment** , in which, tearing into related learning material, such as, plant, animal, public places, people, etc. The reason to select this title as the theme of the learning content of the integrative learning process is because of the 5-6 years old children are surrounded by the environment which are mentioned previously.

Research Stage

The research stage aimed is to study the 5-6 years old children teachers effectiveness in implementing the holistic integrative instructional approach to improve the children multiple intelligences. Therefore, the research is conducted at Aisyah Kinndergarten, in East Jakarta.

As mentioned previously, this research applies mix method research (qualitative and quantitative) which combining in the form of action research, especially, Martini Jamaris's Action Research Model. All of the research data, such as, pre-assessment, post assessment and instructional process are collected in form of qualitative data collections, in which, the researchers observe the 5- 6 years old overt behaviors, followed by interviewing the children and the teachers when it is necessary. Therefore, test of the 5-6 years old multiple intelligences are avoided because it does not match to the characteristics of the children development, in which they actively move and learning through playing. All the research data are used to construct field notes, than the field notes are matched to the multiple intelligences standard measured, in order to classify the 5-6 years old multiple intelligences positions. These activities are dealt with quantitative research implementation.

Pre-Post Assessment

Judging from the score gain by the children during pre-assessment, in which, most of the children or 78,95% sit in score 3. Meaning that the positions of the children multiple intelligences are average. The children score are improve well during post- assessment, in which, 100% of the children sit in score 5, meaning after participating the holistic integrative instructional approach which conducted by the trained teachers, all the children's multiple intelligences are in far above average positions.

Discussion

In accordance to the data which have been presented in previous diagram, in which, empowering kindergarten teachers effectiveness in improving the early aged children multiple intelligences need specific requirements. It is because, empowerment or improvement are two kinds of conditions which exists automatically. The both of them are going under procedures which led to achieve the intended objectives. Therefore, before enhancing the kindergarten teachers effectiveness in organizing instructional process, the competencies of the teachers have to assess, in order, to know the level of knowledge and skills of them in doing the intended goals.

The considerations above are applied by the researchers in empowering the kindergarten teachers effectiveness in improving the 5-6 years old multiple intelligences. Effectiveness refers to the abilities of the teachers to achieve the instructional objectives. In this case, to improve the 5-6 years old children multiple intelligences by implementing the holistic integrative instructional approach. Based on the information concerning to the teachers abilities which involve knowledge and skills, some considerations are decided, among them are to train the teachers aimed to enhance their knowledge and skills about the holistic instructional

approach and multiple intelligences of the 5-6 years old children. The training come out with the abilities of the teachers in organizing the holistic integrative instructional approach to improve the the children multiple intelligences effectively. All the considerations can be proven by data which are collected during the pre assessment, learning process, and post assessment. The children score are improved from 78, 95% of the children are in the average rows to 100% of the children sit in the far above average rows.

Conclusion

Based on the research findings, it can be concluded that multiple intelligences of the early age children, especially the kindergarten children or 5-6 years old children increase after participating the mix method research, in which, it is performed in action research. Even though, the participants of the researches are limited, because it is a case study, however, the research is conducted about 8 weeks, equal to 40 days and equal to 120 hours. Therefore, time used for studying the growth of the kindergarten children's multiple intelligences and the kindergarten teachers' effectiveness in organizing is long enough and the research reflexed that the children's multiple intelligences can be increased if they come into the instructional design and program aimed to improve their multiple intelligences. Even though, the research is perform in kindergarten, but judging from the results of the research, in which, the holistic integrative instructional approach is suitable to improve multiple intelligences, therefore, the instructional approach can be applied in other level of education, such as, elementary schools or secondary schools.

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