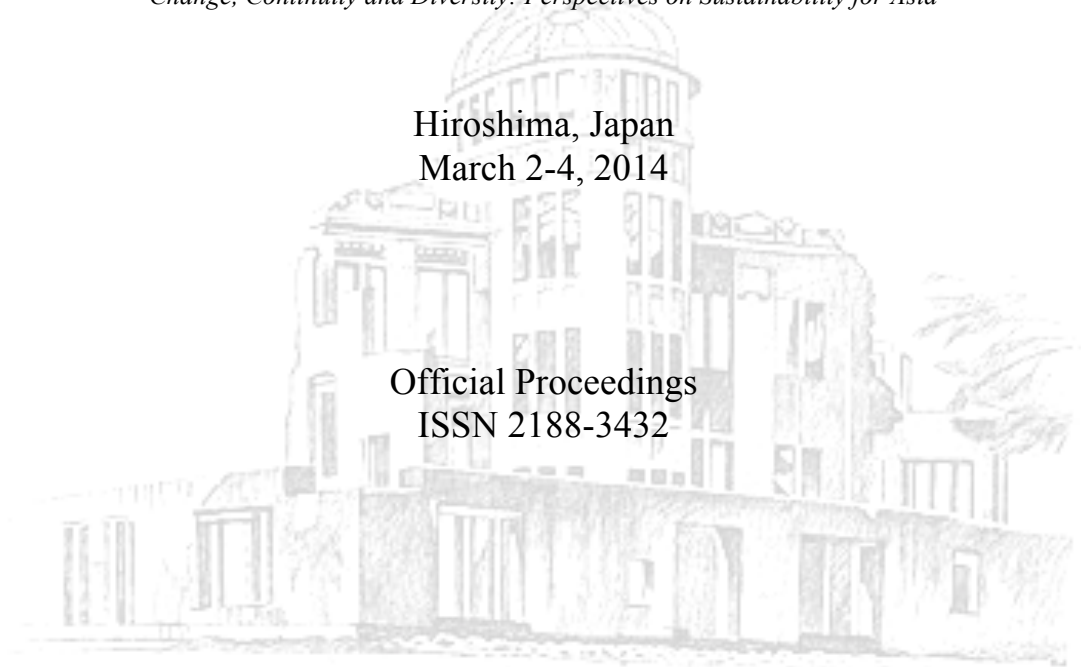


# COHDA 2014

The Conference on Education and Human Development in Asia 2014  
*Change, Continuity and Diversity: Perspectives on Sustainability for Asia*

Hiroshima, Japan  
March 2-4, 2014

Official Proceedings  
ISSN 2188-3432



**The PRESDA Foundation**  
21 Yohachiiri, Tokushige,  
Kitanagoya City, Aichi, 481-0038 Japan  
[www.presdafoundation.org](http://www.presdafoundation.org)

ISSN 2188-3432

# The Development of Multiple Intelligences Learning Model for Early Children in Special Province of Yogyakarta

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## ABSTRACT

In essence, this research aims to develop multiple intelligences learning model which does not only train personal intelligence, but also social intelligence for early childhood. In the long term program, this research is aims: (1) to assess the development of multiple intelligences in early children learning in Yogyakarta; (2) to provide a suitable multimedia that can be used to enhance multiple intelligences for early childhood.

This research uses research and development (R&D) approach. Subjects of this research are teachers and kindergarten students in Yogyakarta. Techniques for collecting data are questionnaires, observation, interviews and document study, supported by focus group discussion (FGD) and field-note/logbook. Data are analyzed qualitatively.

The results of this research are: (1) mapping intelligence which is needed to be developed in early childhood; (2) evaluating the application of the learning process conducted by the teachers, particularly the process which has impact to train multiple intelligences; (3) providing a solution to the factors supporting and inhibiting the practice of multiple intelligences in the kindergarten; (4) making blue print of multimedia learning to train multiple intelligences for early childhood.

**Keywords:** multiple intelligences, early childhood, multimedia learning

## 1 INTRODUCTION

Generally speaking, parents hope their children have good intelligences. So that, providing information to those to improve multiple intelligences for their kids are essential. It can be so, as intelligences are an invaluable asset for children's future life. Unfortunately, many people consider that intelligence is something fixed. Actually, it is something which can be nurtured. Bernard Devlin estimates that genetic factors only play role for 48% in children intelligence formation, the rest is determined by the environmental factors (Wijaya, 2004).

As environmental factors play significance role, the authors choose to conduct a research in this field. The research aims to develop a learning model for multiple intelligences. It is expected, the model will not only improve personal intelligences, but also social intelligences of the early children. Indeed, the research processes have not finished. Yet, some findings have been reached, and therefore can be shared. The longitudinal research will be conducted. It is expected, suggestions to improve children's intelligences can be obtained.

## 2 MULTIPLE INTELLIGENCES

Traditional point of view notices that operationally intelligence as an ability to complete the intelligence tests which is translated into IQ test scores. Indeed, this is an incorrect perspective. According to Gardner, IQ should not be seen as a thing that can be measured merely by a paper and pencil (by test). He consider that intelligence as a culture which is created from learning process, human behaviour, human life style, and nature or environment which are crystallized in a habit. Thus, intelligence is a repeated behaviour. The intelligence has its own development way which differs for each individual

The habit above mentioned can be classified as below:

- a. Habituation caused by physical behaviour. The actions are generated by body kinaesthetic such as playing music instruments, making patterns, determining colour gradations, doing banana kicks, avoiding the opponents while dribbling.
- b. Habituation caused by non-physical behaviour. These actions are in the form of patterned thought which is related to the abilities of processing words, comprehending the number calculations in mathematics, feeling comfort and being happy in personal interaction and also reflecting the environment.

In addition, Gardner also introduced the concept of multiple intelligences. Gardner regards that every child is unique, as they have various intelligences; therefore, parents (which can also be meant as teachers) should realize about it, and help children to develop it. Coherence with that, Misni (2006) consider multiple intelligences as the abilities to solve the problems and do valuable things in the daily activities. Intelligence is not something which can be seen or counted but it is a potential of brain cells which is active or non-active depending on life experiences whether at home, school, or in other places.

According to Gardner (1993), the main point of multiple intelligences theories is laid on the abilities in solving problems and creating a new product. In more detail, it is stated as follow:

- a. The ability to create an effective product or to give a valuable service in a culture;
- b. It is a set of skills of „finding out“ or „creating“ for someone in solving their life problems;
- c. A potential for finding out the solution for their problems using the new understanding;

## 3 EARLY CHILDREN LEARNING

According to Indonesia law, education for early children refer to an effort to educate children in aged 0-6 year. The educational process is conducted by giving the stimulus in order to help them to grow up well, not only physically, but also spiritually; so that, they will get ready for the next level of education (Art 1 (14) Law No. 20/2003). According to Suyanto (2003, 7), the range age time as above mentioned is the most essential time for shaping the children’s character; hence it is usually called as a golden age.

Children have different characteristics from adults in case of behaviour. Therefore, they also have different characteristics in learning. These characteristics need to be observed for the parents’ or teachers’ references. The references can be used to choose the most suitable learning activities for the children.

Learning processes for the early children are interactions processes between children, parents, or other adults in an environment. This interaction aims to achieve the task development. The interaction reflects a relationship among the children to get a meaningful experience. Vygotsky states that the social interaction is an important experience for children’s thinking process development (Gopnik, et al, 2006, 44). Children’s high mental activity can be formed through having some interactions with other people. Greeberg describes that the learning process can be held effectively if the children can learn through working, playing and living together with their environment (Isjoni, 2006).

Essentially, children are learning while playing; therefore, the learning process for early children should be designed by accommodating playing activities. By doing so, children feel comfortable and happy during their learning process.

#### **4 DEVELOPING LEARNING MEDIA TO INCREASE MULTIPLE INTELLIGENCES IN EARLY CHILDREN**

In general, media learning for pre-school children is playing tools. Principally, learning media are useful for them to comprehend something difficult or to simplify something complex. In addition, multimedia can be a medium to improve children's multiple intelligences (Rahmadonna, 2006). Multimedia learning is a learning media that is expected to help the learning process in order to achieve the goals. Phillips (1997, 8) expresses that the multimedia is characterized by the presence of texts, pictures, sounds, animations, and videos; some or all of which are organized into some coherent programs.

Related to that, Armstrong (2003, 286) argues that a good and accessible multimedia program can be used to improve the multiple intelligences; however, it should promote curiosity of the children. So that, the program should not only provide questions, and then ask the children to answer the questions, but also provide such mechanism to stimulate creative thinking, problem solving, building, making decision, etc. The development of multimedia learning to improve the multiple intelligences in early children is developed by observing three main developing media theories. These are theory perspective of behaviourist, cognitive, and constructivist (Heinich, et al, 1996,8).

The developed multimedia is expected to be interactive tools for children. It is also expected that the developed multimedia provides the playing elements through interactive games, kinaesthetic activities elements through the children moves while playing using the multimedia, singing through the surrounding music and learning through the content of the developed multimedia itself.

### **5 RESULTS AND DISCUSSIONS**

#### **5.1 Research Results**

To develop the multiple intelligences learning model for early children in Yogyakarta, the authors has developed the multimedia prototype. It can be used as the alternative for the implementation of learning process for early childhood. To develop the prototype, we have conducted the following activities.

##### **1. Field Condition Analysis**

Analysis of field condition was conducted by the authors to observe the condition of learning process in early children. The authors picked two early children schools in one city and four regencies under the province of Yogyakarta. The schools were chosen based on their formal status. Meaning, these should be government schools or registered private schools.

##### **2. Developed Multiple Intelligences Mapping**

Based on the observation, it is founded that almost all schools have implemented learning models which can promote multiple intelligences; however, their results were less optimal. Teachers do what they usually do because these are the routine activities. Hence, it can be seen that most of the teachers do not know the relation between the activities and their impact to learning process.

### 3. Focus Group Discussion (FGD)

FGD was conducted by inviting ten selected teachers. This activity was aimed to give explanations to the teachers about multiple intelligences. Also, to involve them on this research, particularly for determining which intelligences development are needed for their students. The participants of FGD are twenty teachers which are as representative five cities in Yogyakarta.

### 4. Determining Intelligences Would Be Developed

Based on FGD, it was recognized that each of intelligences was appeared in children's activities. The kinaesthetic and interpersonal intelligences were appeared more dominantly. Perhaps, it is because children movements are easier to be observed. Interestingly, some observed children do have other intelligences, such as musical or naturalistic.

### 5. Developing Multimedia Design

After mapping the needs, the next stage conducted by authors was developing multimedia design. To do so, authors refer to the mapping of the needs for multimedia development. Data obtained from the previous stages gave some conceptions to develop the story board and to design the character image.

### 6. The Developed Multimedia Prototype

The last step was that to create the prototype of multiple intelligences learning multimedia. The prototype was arranged in accordance to the story board that had been developed on the previous steps.



Figure 1: Example of prototype multimedia

This prototype above was developed by considering intelligence aspects which should be trained for children. Main focus of this intelligences are contains of 5 intelligences (musical, visual, kinaesthetic, spatial, and mathematic logic); However, on the process of implementation, children interpersonal and intrapersonal intelligences automatically can be improved through multimedia communication. Also children naturalist intelligence can be trained from the background of multimedia.

### 5.2 Discussion

Based on the processes conducted and steps in this research, the authors have developed the learning model of multiple intelligences. This model was followed Piaget suggestion, as he said early children need a concrete and comprehensible learning model. Besides, the authors tried to follow the theoretical principles of multimedia development and practical principles of multimedia

design. In the development of the multimedia used some consideration of learning theories and the underlying studies. For the media aspects, behaviourist perspective was commonly used, as it was seen from the modelling shown and also the repetitions given. In addition, this multimedia referred the users to follow the authors' mind indirectly. In the step of delivering the materials, the authors tried to use the perspective of cognitive-constructivist theory. The material itself was made to improve children's multiple intelligences.



Figure 2: Examples of multiple intelligences multimedia

The authors also focused on the theoretical and practical study of the multimedia development design, particularly on the bright colours selection. Bright colours were selected in order to match the colours to the characteristic of children. Besides, the bright colours can avoid children from exhaustion during their learning process. The pictures also were made by considering to the children characteristic. The picture should be interesting to the children. The background illustrations were also made by showing the children's surrounding environment. Conceptually speaking, the prototype above coherences with the theories; however, it needs to be tested whether or not it can be well implemented. The test will be started soon

## 6 CONCLUSION AND SUGGESTION

Research that has been conducted by authors shows that almost all targeted schools have implemented learning models which can promote multiple intelligences; however, their results were less optimal. Teachers do what they usually do because these are the routine activities. Hence, it can be seen that most of the teachers do not know the relation between the activities and their impact to learning process. In addition, the research observation shows that kinesthetic and interpersonal intelligences were appeared more dominantly, but other intelligences were appeared as well. These less dominant intelligences should be more encouraged.

The problem of human resources and less balance intelligence as above mentioned should be addressed. To respond these, the authors have designed prototype of multimedia learning model. The prototype has regard to theoretical and practical analysis; however, the applicability has not been tested yet. Indeed, it will be tested soon.

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