

Development of Learning Model Based on the Personal Source in Playing Javanese Gamelan for Children with Special Needs

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Abstract: This study aims to produce products in the form of learning models based on personal clumps that are appropriate to apply in learning Javanese Gamelan for children with special needs. The development model used is the ADDIE model with the consideration that this model is designed for a training. The stages of the development procedure are analysis, design, development, implementation and evaluation. Subjects in this study were limited to children with special needs with the criteria of low vision, mental retardation and physical disability. The research instrument to assess the feasibility of the product in the form of a that is addressed to the trainer of three people as the product users. Data analysis technique used is statistic descriptive. The results showed that (1) the product produced in this development is a learning model based on personal source in playing Javanese gamelan to children with special needs. The model includes three stages ranging from pre-learning, learning and post-learning. It also includes the scope and elements of the learning model applied to each of the criteria of the child. (2) The feasibility of the resulting product is proven through the field test on 24 children with special needs at Bina Siwi Orphanage Yogyakarta. In addition, it can be seen from the results of descriptive statistical analysis showing that the product is worth using.

1 INTRODUCTION

Children with special needs are the children who are experiencing abnormalities or deviations both physical, mental, intellectual, social and emotional in their process of growth and development compared with other children in their age. The misunderstanding from the society about children with special need is because of the lack of representative and actual readings of the extraordinary child factors, classification, and its characteristics from each type of extraordinary children. In the extraordinary education, children with special needs are classified into several groups according to the type of child abnormality. The classification includes groups of mental retardation children, learning disabilities, emotional disturbances, physical abnormalities, hearing impairment, seeing impairment, language and speech disorders, and gifted child groups.

Mental retardation is a state of mental retardation, a condition also known as mental retardation (mental retardation). Children with mental retardation have an IQ below the average normal child, thus causing their intellectual and

intellectual functioning to be disrupted which triggers other problems during their development. Their differences in abilities and needs compared to children generally require special forms of care and services according to their abilities. Their different abilities are not an excuse to avoid even throwing them away, but rather generate awareness to appreciate the diversity of individuals and to pay the attention and the ideal service they are supposed to receive.

Differences in their abilities and needs compared to regular children require special forms of care and services that are appropriate with their conditions. Their different conditions are not an excuse to avoid even to leave them away, but rather generate awareness to respect the diversity of individuals and give them the attention and the ideal service they are supposed to receive. The negative views on children with special needs increase the problem in their development, especially in mental and social development. Especially in children with mental retardation or children with developmental obstacles that have limitations on general intellectuals that are significantly below average. These limitations result in them being viewed by the society as objects,

without rights, even the fail products so that they do not need to go to school and do not need to be treated properly. In fact, children with special needs also have rights, compulsory in education, can work and have a better future that required education or special training to develop the ability of children with special needs.

Government efforts in providing educational services to children with special needs still require hard work. It is written in the article on Ministry of Education and Culture of Indonesia website that the achievement of the percentage until 2017 is still at 18% of children with special needs, including children with mental retardation who have received educational services. Therefore training programs are needed to keep them skilled even though not through formal education. One of the training programs is in the field of art consisting of music art, fine arts and dance art. Related to that, music can stimulate the children with mental retardation to improve mental function, motor, and intelligence (Milyartini, 2011). In addition, involvement with music can improve self-perception in children with mental retardation (Hallam, 2010). The opportunity to play the instrument can be used as a motivation to better manage emotions in the children with mental retardation. Music creates a physiological response, which is associated with emotional reactions (Sze, 2004). Physical limitations, mental and social interaction abilities, not an obstacle to becoming human beings are valuable to others.

The results of previous research have provided the fact that music can be used as media to improve the quality of children with mental retardation can be a reason for institutions that accept children with mental retardation in order to have a program in training children with mental retardation in the field of music art. One of the institutions that received children with mental retardation is Bina Siwi Orphanage. Bina Siwi Orphanage located in Pajangan Sub district, Bantul Regency Yogyakarta is one of the institutions that cares for children with special needs consisting of blind, physical abnormalities, and mental retardation.

The interview on July 2, 2017 with the Chairman of the Home gave information that some of the children in the orphanage only finished their education up to the junior high level. Therefore Bina Siwi Orphanage has a program in providing their skills in the field of art. The arts include art crafts and music art. In the field of art crafts, children in the orphanage are trained to be creative making souvenirs, key chains, and batik. While in the field of music art, Bina Siwi Orphanage has a band tool,

tambourine and Gamelan Java *laras pelog* also *slendro*.

Unfortunately, Java Gamelan is not maximally utilized because there are no trainers willing to provide training in the field of *karawitan* art. From the interview on July 2, 2017 with the chairman of Bina Siwi Orphanage, some gamelan music trainers requested to train have constraints related to the characteristics of the children with mental retardation. The absence of an opportunity to receive training in *karawitan* art causes the children with mental retardation at Bina Siwi Orphanage not to understand the structural pattern in each rhythm of each *gendhing* and the framework of *balungan* notation in each *gendhing*.

In the learning of Javanese gamelan music, the children with mental retardation are trained to improve their memory to the notion of *balungan pelog* whose range of tone is not very wide because there are only seven numbers in it, 2 (ro), 3 (lu), 4 (pat), 5 (mo), 6 (nem), and 7 (pi). The selection of Javanese gamelan art with *laras pelog* is adjusted to the ability of the children with mental retardation who experience cognitive deficits when studying. As explained that cognitive deficits in the children with mental retardation is reflected in perception, memory, developing ideas, evaluation and reasoning so as to have barriers in storing information rather than abstract thinking (Rochyadi, 2005). Therefore, Javanese musical art is expected to have no great obstacle to the ability of the children with mental retardation in storing information.

For a learning effectiveness, it takes approach, strategy, method, learning technique that are packed in one learning model. The learning model is a plan or pattern that can be used to design the necessary learning materials and to guide the teaching process in the classroom (Suyono and Hariyanto, 2015). Referring to the clumps of the model of learning by Joyce and Weil which later can be further developed according to the needs of the learning, the personal model is chosen the use of learning models in the personal model is more focused on the individual view (Joyce and Weil, 1996).

From the description of the background above, it appears that with music children with special needs can gain confidence, self-esteem and motivation to live better, and more acceptable in the society. Physical limitations, mental and social interaction abilities, not an obstacle to becoming human beings that are valuable to others. Therefore, it is necessary to develop a personalized learning model in Javanese gamelan learning process that will be applied to Bina Siwi Orphanage Yogyakarta by give

attention on the characteristics of children with special needs so the researcher can be able to arrange effective and efficient learning, able to provide solutions to problems in learning, and also able to unfold the benefits they acquired through a Javanese gamelan art.

2 RESEARCH METHODS

This research is Research and Development (R and D), a process used to develop and validate the products used in education and test its effectiveness. ADDIE (Learning-Design-Develop-Implement-Evaluate) Learning Design based on the consideration that the model is applied to develop an instructional model product that oriented to produce a proper, effective, dynamic training. In addition, evaluation of the ADDIE model can be applied at all stages. It will be useful for the improvement of a training because there is always something to be improved in every progress.

Research and development activities conducted in July-September 2017. The trial of the product conducted at the orphanage Bina Siwi Yogyakarta. Subjects involved in this study were 1 material expert, 3 trainers, 3 assessors, 3 students on a limited trial, 24 students on field trials to assess the products that have been developed. Subjects involved in product trial were 24 students at Bina Insani Orphanage Yogyakarta with mental retardation, disabilities and blindness criteria.

Data collection techniques used in this study are questionnaires, observations, and interviews. Questionnaire function in this study is to determine the advantages and disadvantages of the developed product, and provide an objective assessment of the product. There are 2 (two) kinds of questionnaire in this research, that are questionnaire for material expert and questionnaire for questionnaire for trainer. Interview techniques are used when developers conduct needs analysis. Interviews on needs analysis were conducted with 2 (two) informants as guardians of the research subjects. The interview form used is unstructured interview. Observations are used in some form of activity. First, at the time of needs analysis, which includes observing the condition of the orphanage and the condition of the students. The second observation is done on the product trial, that is, when the product is used in the learning activity. In addition, observations were made to observe behavioral changes in students. Furthermore, to see the feasibility of the product being developed using

descriptive analysis with the determination of the ideal score.

3 RESULTS OF DEVELOPMENT AND DISCUSSION

The first step in developing the learning model is to determine the competencies that will be achieved. Competence to be achieved in learning Javanese Gamelan in children with special needs with the category of mental retardation, disabilities and visually impaired is able to play of *lancaran laras pelog*. Next step is prepare the facilities and instruments. The facilities and instruments is a set of Javanese *gamelan (pelog)* consisting of: *ricikan balungan (slenthem, demung, saron barung, and saron penerus)*, *ricikan sturktural (kethuk kenong, kempul, gong, kendhang, and kenong)*, and *ricikan garap (bonang barung, bonang penerus, and sindhen)*.

In this development provided mp3 files that played through mp3 player with headphones. Finally, the necessary instruments is a microphone with a minimalist sound system. The development of the learning model of the personal model consists of three stages: pre-learning, learning and post-learning.

3.1 Pre-Learning

This stage is done before the start of learning to minimize trial and error. There are two stages of preparing learning and understanding learners. In the first stage, the coach should master the *gamelan ricikan* both the name of *ricikan*, the character and the arrangement of the barrel. Next, prepare the learning materials. The material given in accordance with the purpose of learning is able to play *gendhing alit* rhythm smooth with *pelog* barrel. Repertoire Javanese *gendhing* is divided into three namely *gendhing ageng, gendhing tengah* and *gendhing alit* (Supanggih, 2009). *Gendhing alit* is *gendhing* with *kendhangan* pattern *lancaran, ladrang* and *ketawang*. The *gendhing tengah* is *gendhing* which uses the candy pattern of Candra for the *slendro* barrel and the Sarayudha kendas for the *pelog* barrel. While *gendhing ageng* using Jangga *kendhangan* pattern on the *slendro* barrel and *kendhangan Semang Alit, Maawur, and Semang Ageng* for *pelog* barrel. The shape of fluency including *gendhing alit* which is the simplest *gendhing* among the three. The shape of fluency has the following characteristics :

a) The number of saving balances or in music is called a tap in one piece (one line) consisting of 16 taps; b) One *gongan* consists of 4 *gatra*, in *gatra* music is the bar; c) Each *gatra* is made up of 4 taps with details on the first and third taps for the shoot of the *kethuk*, the second tap for the *kempul's* pretense and the fourth tap for *kenong* excerpts; and d) Ricikan gong on the last four *gatra* taps of each line.

Example *gendhing alit* rhythm lismar with pelog pelas are: *Prau Layar, Gugur Gunung, Sluku-Sluku Bathok, Kebogiro, Manyar Sewu, Singa Nebah, Tropongan, Tropongbang, Udan Mas*. In this research the material used is *Gugur Gunung*. Trainer consists of at least 3 people, in accordance with the grouping of Javanese Gamelan ricikan that is *balungan, garap* and structural. That the ricikan in outline based on its function into three namely *ricikan balungan, ricikan garap* and structural ricikan (Supanggah, 2009). *Ricikan balungan* consists of slenthem, demung, saron barung, saron penerus, bonang panembung. *Ricikan garap* consists of rebab, gender barung, gender penerus, bonang barung, bonang penerus, gambang, siter, flute and sindhen. While the structural ricikan consists of kethuk kempyang, kendhang, kenong, kempul, gong, kenong, kemanak and kecer. In this research, the *balungan ricikan* consists of 4 instruments namely slenthem, demung, saron barung, and saron penerus. *Ricikan garap* consists of bonang barung, bonang penerus and sindhen. While the structural ricikan consists of kenong, kendhang, kempul and gong. Each instrument is played by one children with mental retardation except kempul and gong played by one children with mental retardation.

In the second phase, the trainer must also understand the learners both physically and non-physically. It aims to adjust their ability to the ricikan they will learn, as well as a form of approach to learners to understand their characteristics. As for how the trainer responds to the children with mental retardation that is (1) get closer to the learners to help the adaptation ability and difficulty in relationship with others; (2) Provide an easy-to-understand notation notes that learners forget and find it difficult to express a memory; (3) The trainer helps learners to memorize because the reading ability of the child is limited. Trainers as much as possible do not put pressure on the child so that the child is not depressed.

3.2 Learning

At the learning stage, consists of time allocation and learning stages. Learning karawitan art with *gendhing* material alit rhythms pelog lancaran allocated as many as 8 times where in a week there are 2 meetings. Each meeting takes as much as 90 minutes overall. Meetings are held regularly both in the election day and time of the start of each meeting to assist in organizing itself, as well as for the effectiveness of learning. The learning of Javanese gamelan music in children with mental retardation begins with opening, demonstration, personal training, and repeating joint exercises. The details of each stage are as follows:

3.2.1 Opening

This stage is delivered through lectures by the team of trainers. The opening material at the first meeting was sharing a story about the experience in the field of karawitan art by a team of trainers. While at the next meeting, the opening is filled with reflections of previous meetings. This opening stage is delivered for 10 minutes.

3.2.2 Demonstration

During the demonstration stage, the team provided an example consisting of each of the ricikans of *balungan, ricikan garap* and structural ricikan. The demonstration by the team of trainers is done by giving the example of *gendhing* which will be studied as much as 3 rounds (1) *ricikan balungan* (demung), *ricikan garap* (bonang barung), structural ricikan (kempul-gong); (2) *ricikan balungan* (saron penerus), *ricikan garap* (bonang penerus), structural ricikan (kethuk-kenong); (3) *ricikan balungan* (saron), *ricikan garap* (bonang barung), structural ricikan (kendhang). The demonstration was held for 10 minutes. After the demonstration takes place, the trainer begins personalized learning in the three groups of ricikans that are in the next stage.

3.2.3 Early Personal Training

This stage was held after a 30 minute demonstration by the team. The team of trainers consisting of 3 people divided by type of ricikan that is *balungan, garap* and structural. In this research, the *balungan ricikan* consists of 4 instruments namely slenthem, demung, saron barung, and saron penerus. *Ricikan garap* consists of bonang barung, bonang penerus and sindhen. While the structural ricikan consists of kenong, kendhang, kempul and gong. Each

instrument is played by one children with mental retardation except kempul and gong played by one children with mental retardation. At this stage it is not like learning in children in general that is with written scores or written notation. This is because the limitations in terms of academic children are not able to read well so difficult to share the focus between readings, memorizing the location of keys and play the instrument.

In the *ricikan balungan*, children with mental retardation begins by memorizing the notation balungan every 2 gatra consisting of 8 beats balungan. So at this stage, the coach is more dominant to help children memorize. Once successfully memorized, then practiced using their respective instruments. At the time of practice with the instrument, the trainer should personally assist each child. Because in addition to memorizing the notation with pronunciation, the children with mental retardation also need to memorize their hand movements in the beat according to the notation. Therefore, the coach helps by pointing to the bladed part of the blade. For saron penerus instrument using Solo style that is return after beats balint (*ngintili*).

In the *ricikan garap*, the instrument bonang baru and penerus is basically the same as the ritual of the balungan that begins by memorizing the tone played. However, because it has a different pattern, memorization is done every 4 gatra. Once successfully memorized, then practiced by following the pattern according to the rhythm of fluency. For sindhen, learn the gending that is being learned through the mp3 player provided by the trainer, after memorizing the lyrics, the trainer personally evaluates the notation of his singing.

As for the *ricikan garap* kenong and kethuk instrument position should be arranged in the order that is always the same because children with mental retardation tend to memorize their hand movements. Nevertheless, learning still begins by memorizing the tone to be played. For kempul and gong instruments held by one child. The learning process in kempul and gong is done by observing the pattern of kendhangan, because if given the calculation pattern will complicate the children with mental retardation. So at this stage the trainer who is responsible for the *ricikan* begin to practice on kendhang instruments. In a simple gending length kendang which is used enough kendang ketipung (small kendang) and kendang Bem (biggest kendang). The pattern of kendhangan is played according to the trainer's instruction with no pronunciation (t), tung (p), dhah (b). No (t) is the small side of the ketipung drum that is struck with

the palm of the hand. Tung (p) is the large side of the ketipung drum that is struck with the tip of the fingers of the palm of the hand. While dhah (b) large side on the edge of the drum bem being hit with the palm of the hand.

3.2.4 Preliminary Group Exercise

After practicing personally, the next stage is to practice together which means all the *ricikan* play simultaneously. This stage is held for 10 minutes. At this stage, the trainer should look at the parts of the instrument that have not been able to follow the course of gending simultaneously. After examination, then in the next stage the trainer is more focused on the instrument.

3.2.5 Final Personal Training

This stage is carried out for 20 minutes which is focused on evaluation results during group exercises.

3.2.6 Final Joint Exercise

This stage is the same as the previous group exercise. However, observations were made for the exercise at the next meeting.

3.2.7 Closing

At this stage joint evaluation between trainers with children with mental retardation as learners in learning Javanese Karawitan art. Submission of evaluation using language that motivates so that learners do not feel inferior.

3.3 Post-Learning

To see the results of the learning process that has been implemented from the psychomotor aspect can use non test instruments with indicators: patterns, techniques, cohesiveness, harmonization and taste. Psychomotor aspect in this learning is Javanese *gamelan* playing skills. At this stage the trainer as a product user gives an assessment on the questionnaire where there are four aspects that are assessed are the scope of learning, learning objectives, materials, learning stages and time allocation. The result of a 93.3% eligibility percentage which can then be interpreted in the feasibility category range based on the scale rating scale in the category very eligible to apply.

4 CONCLUSIONS

Based on the results of research and development that has been done, it can be concluded several things as follows: 1) the final product of the learning model based on the personal models contains about the packaging of learning from pre-learning, learning, to post-learning. In the product, there are learning materials such as *gendhing alit (lancaran laras pelog)*, learning steps, the scope of a learning model that should be applied to students with mental retardation; 2) The feasibility and quality of the learning model product is good, with a score of 4.21 or 84.2% on expert material assessment; 3) product feasibility in applying Javanese *Gamelan* learning to children with special needs is very feasible, with a percentage of 93.3%. Thus, the purpose of this study has been achieved is to produce products in the form of learning models for Javanese gamelan music in children with mental retardation criteria can be educated. In addition, the product is considered very feasible so it can be used in learning Javanese gamelan music with the characteristics of the same learners.

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