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Game Innovation Development of Multiple Intelligence-Based Puppet Films

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This research makes game innovation development with the children's game Pipileman; one of the games in Jatitujuh Village, West Java. Game *Pipileman*, which can only be played in the evening, will be developed so that it can be played during the day and anywhere with materials as well as tools that are safe for children. This research is research and development (R&D) to produce and test the effectiveness of these products. The application of nine aspects of intelligence are embodied into development themes and indicators and the sequence of learning strategies. Based on the results of the field trials that were conducted to test the effectiveness of a model puppet game films in the learning process in children, it can be concluded that the activity of the game puppet film that has been designed and developed systematically can improve achievement indicators of the mulitple intelligences of the child.

Key words: *Pipileman Games, Innovation, Puppet Film Games, Plural Intelligence.*

Introduction

Delivering a message from a person to another person can be done through a variety of ways, whether submitted directly or conveyed through the media (Azhar, 2007). At this point, the various media are a better messenger as messages are very diverse, from the writing medium, print, electronic media, play activities and games in the home environment or environmental education; particularly in the world of early childhood education. Prior to the introduction of electronic media like television to Indonesia, one of the media messages that existed in some cultures of Indonesia was the *Wayang* puppet, i.e. artificial person made of leather or wood engravings and so on, which can be used for playing a character on a show of traditional

drama (KBBI, 2005). Puppets were estimated to be introduced to Indonesia in around the 4th century BC as one of the efforts to spread religion, while the electronic media-television entry to Indonesia was around 1900. Currently a lot of innovation development of the television puppet and media that can be used in the world of children as play activities and games are meaningful, as well as on environmental education as one of the media in the process of teaching and learning activities.

Play for children is essential. During early childhood, play is the life that they can't leave; their play is one form of their skill, ability and time to play was not scheduled and takes place all the time as long as the children have not felt tired to rest or sleep (Malone, 2007). At the time of play, children can receive a wide range of knowledge with directives, guidance from varied play and games to make it the experience yourself, experience life with friends and experience to fit in with the surrounding environment. One of the villages that existed in the West Java village of Jatitujuh to be exact, Majalengka has one type of traditional children's game called *Pipileman*. The game combines elements of puppetry and television. At the time of preliminary research, the research team saw that this game could stimulate all the aspects of the intelligence of the plural, from the process of preparation until the time children play it. But the game *Pipileman* weakness is that it can only be played in the evening, so it is not an effective media for kids in early childhood education during the day.

Research Objectives

In general, the purpose of this research is to develop the innovation of the game *Pipileman* as one of the games in the village Jatitujuh Majalengka, West Java. *Pipileman* games that were previously only playable at night will be developed to be played during the day and anywhere with material and safe tools for children. The development of this innovation is expected to be one of stimulation of children's mulitple intelligences development. The specific objectives of the study were the following:

1. Develop the design of the innovation of the game puppet film based on mulitple intelligences.
2. To know the expert assessment of the innovations in the game puppet film based on mulitple intelligences developed
3. To know of the effectiveness of the innovations in the game puppet film based on mulitple intelligences developed

Literature Review

The Development of Puppet and Movie in Indonesia

The word puppet literally means shadow, but over time the notion of *Wayang* puppets changed. As an art theatre means stage performances, where the Director comes into play

which is called the mastermind (Guritno, 1988). Puppets are a form of folk theatre that is often associated with "puppet" and "shadow" because in the puppet show used a white screen and the people watch shadows behind them (Rosidi, 2000). There is also an opinion that puppets by watching people study the shadows of human life which is reflected in the play of *wayang* (Rosidi, 2000). *Wayang* shadow-puppet or similar is not only in Indonesia, many other countries that have similar a puppet show. But the performances of shadow puppet (*Wayang*) in Indonesia has uniqueness and style, which is a genuine masterpiece of Indonesia.

Pictures. Puppet Art

The art of puppet cultures one of Indonesia's cultural world has been recognised as a world heritage masterpiece in the art of speech (masterpiece of oral and intangible heritage of humanity), in the process of development is one form of a mix of several elements of the culture. Puppets continue to develop to become an advanced and dynamic form and its contents as it is now, and the development will continue to adjust the times. This puppet art and cultural changes do not affect their true identity and outlined in the history of the puppet. So, the puppet in question in this study is a medium used to do a speech, the use of the delivery only took the shadow puppet figures.

Game *Pipileman*

Referring to the Sundanese culture-based game Jatitujuh Village, Majalengka, West Java has a *Pipileman* game which is a blend of film technique and puppets. Game *Pipileman* in the village of Jatitujuh is one of the game media to the right to develop children's intelligence,

but at the end of the process can only be done at night, because this *Pipileman* is done using a small white screen with a size of about 30-40 cm, and the image of the cardboard. Images of the cast (people, animals, vehicles, and so on) in the *Pipileman* is mounted on a piece of thread that is installed behind the scenes and glowing lights cempor oil or resin so that the audience can see his shadow on the other.

Observation on pre-observation, which was discovered by the research team, *Pipileman* has a value of education which can be one of the media to stimulate multiple intelligence of the child. Therefore, the research team on this research is very interested in developing the game *Pipileman* into a medium that can be used on any child and wherever they are.

Picture 1. *Pipileman* Game Activity Process

Pipileman games are played at night by using a variety of media. The child will be a mastermind in these games usually can tell stories. While the kids are watching what is told to respond were the mastermind.

Picture 2. *Pipileman* played Games Kids

The game is done using a small white screen size of about 30-40 cm, and the image of the cardboard. Images of the cast (people, animals, vehicles, and so on) in the *Pipileman* is mounted on a piece of thread that is installed behind the scenes and glowing lights cempor oil or resin so that the audience can see his shadow on the other. Materials and tools using bamboo ± 90cm ± 1 m, white screen, strobe light, thick paper/cardboard and yarn. *Pipileman* for media creation step is to sew the two sides of the screen to be able to incorporate bamboo; after bamboo was added, plug it into the two blades to the ground; make a figure to be played; turn on the spotlight behind a white screen that will be a puppeteer played the pictures/figures.

Pipileman in the Jatitujuh Village has its advantages and disadvantages. The benefits are from the manufacturing process until the *Pipileman* is played. Children can make their creation in the form of story ideas that will be performed, making the role to be played by the materials and tools that are all around them. While the disadvantage is *Pipileman* games can only be played in the evening because they require a dark room to generate a shadow, so they can't be played in the afternoon; while the media will allow learning through the game being played during the day.

Therefore, the research team at the time of observation in the field find that actually *Pipileman* can serve as one of the media learning resources to stimulate children's multiple intelligences. The research team will do this in order for innovation to the *Pipileman* game so it can be one of the media learning resources that can stimulate the mulitple intelligences of the child. *Pipileman* (puppet film) innovation was expected to be a medium for effective learning resources and efficiently for the use of teachers and children and used by interracial children themself.

Puppet Film as Innovation Pipileman

The game puppet film that developed in this research is a form of traditional children's games of innovation in Jatitujuh Village, Majalengka, namely *Pipileman*. On the game puppet film that was developed in this study systematically, deliberately designed by the theme used in the early childhood learning, not like the game *Pipileman* done incidentally without having a specific purpose other than sheer entertainment elements. Derived from the word *Pipileman* which is a combination of the techniques of puppet and puppet films, the film takes the element of shadow puppet techniques and techniques of narrative stories of film technique. Then the research team agreed to give the name of the product innovation with the name of the game "puppet films".

According to (Hughes, 2009), a child development expert, playing is a different thing to learning and working. An activity called five elements must be playing in it, has the purpose

of which the game itself to get satisfaction, choose freely the will of its own and no one asked or forced, fun and can be enjoyed, to develop imaginative power, creativity, and do actively and consciously. Play for children is a form of appreciation of the sense of motion, imagination consciously to figure out something to learn about life, the play is also the way a child learns to know themselves, know that there can be, and make them understand life (Satriana, 2013).

The game puppet film was planned to be designed by the tools and materials that are not harmful to the child, the child is easy, practically brought everywhere so that early childhood educators can process these activities wherever and whenever. Puppet movie will be made after conducting a field survey so that the desired design is obtained. The pattern of the game was planned to be on the process of film puppet activity games that can develop the potential of the nine multiple intelligence compounds owned by the child.

Research Method

This research is Research and Development (R&D). The development model used in this study was a model developed by Gall, Borg, and Gall (1996) as a major development model. It was further modified with several other models such as the Dick, Carey, and Carey (2005) and Model Kemp, Morrison, and Ross (1994). The development model in this study includes five main phases, namely: information collection, product development, expert validity test, field test and dissemination/implementation. The research time is held from March to October. The product validity analysis is rated by three experts in the field of learning media, PAUD and child development. After the prototype of the movie puppet game is produced, the test was carried out in a small group in the PAUD institution located in the village of Jatitujuh. Later, other small group trials were conducted in two PAUD institutions outside the area of the Jatitujuh village and remained in the area of West Java; as a comparison of the test results in Jatitujuh village. The first group in the children of Kober Napak Jatitujuh Majalengka-West Java where the number of students is 10 children, the second group is in TK Mutiara Kasih Bogor-West Java with 15 students, and the third group in TK Mutiara Hati Bogor West Java has 15 children.

Research data in the form of qualitative data and quantitative data. Qualitative data is collected through an interview instrument and documentation guidelines. Quantitative data was collected using validation and test sheet instruments. The collected data is analysed through three techniques: content analysis, descriptive analysis and hypothesis analysis. Content analysis is mainly for analysing learning devices with data obtained from the results of expert studies. The data of numbers is interpreted according to the defined and judging meanings by the criteria specified. The data is classified, and further simplified sentences are

coded. Data collected in the field through observation, interviews and documentation is then analysed and interpreted according to the purpose of the research that has been established.

Developed learning devices are valid if all aspects of the assessment are valid by the validator. Thus, the data analysis results that do not meet the valid categories in this study will be considered as a consideration to revise the learning device before testing (Ramadhan, Mardapi, Prasetyo, & Utomo, 2019). Data results obtained from validation and response were analysed using descriptive statistics. The results of the descriptive analysis are then converted to the effective learning results table below.

Table 1: Guidelines for respondent response conventions

Percentage of Obtained Scores (%)	**Effectivity**
X > 76	Excellent
50 < X ≤ 75	Good
25 < X ≤ 50	Fair
X ≤ 25	Poor

The results of the calculation of responses from respondents are calculated using the following equation:

$$\text{Response} = \frac{number\ of\ values\ for\ each\ sub-variable}{maximum\ number\ of\ scores} \text{ x } 100\%$$

Results

Design of Children's Games Puppet Film

According to the findings in the field, the lack of media in the process of teaching and learning activities is not well stimulated by the stages of child development especially in the mulitple intelligences. The existence of the game puppet film can be one of the media that can be used easily, either by teachers, kids, and teachers with the children. The initial process is doing the game puppet film that can provide stimulation of the good in improving the intelligence of the child, so that the plural can grow flowers according to the stages of his age.

Picture 3. The characteristics of the Model developed

Product development of the puppet film has characteristics include:

1. The learning resources that can be made into media teaching and learning activities.
2. Can be used anytime, either used at night or during the day.
3. Can be used both outdoors and indoors.
4. A Form of learning resources are included in the category of equipment (device).
5. The audio-visual media motion.
6. It can be used by teachers and children as well as used by the children themselves.
7. As one of the early childhood learning media that can improve the multiple intelligences of students.
8. One of the media activities that have elements of culture, namely the technique of shadow puppets.

Expert Judgement

The preliminary 1 trial is an expert judgement evaluation given to three experts to assess the model design of the game puppet film for early childhood. The three experts consist of media experts, learning design experts and early childhood education experts.

The validation process by experts is done in two stages. The results of the expert validation phase I acquired the total score of 39 with a percentage of 65% and was categorised as "good". After the revision in phase I, continuation of the validation of experts in phase II. The results of the assessment of the phase II validator against the product obtained a score of 55 with a percentage of 91.66% with the category "excellent". It can be known that it deserves to be examined.

Based on the results of the analysis, the details of the revisions needed to be done. The terminology used in the development of learning design is felt to be more simplified; Each ingredient, layout and process should be identifiable into one of the areas of development so that the functionality of one intellect can be a medium for other intelligences.

Evaluation of Practitioners

Evaluation of practitioners given in nine practitioners from the PAUD institutions are classified under the qualifications of education and the long experience of teaching. They give input to the game media puppet film and the order of learning strategy when the film is used (according to the daily activity unit that has been compiled).

Based on the results of the evaluation of 9 practitioners who have given input to the daily activity unit (SKH) which is an implementation of the model and design of a multiple intelligence based learning for early childhood. The result of the assessment by stage I practitioners is to acquire the number of scoring 47 with a percentage of 78.33% and is categorised as "good". Results obtained in the assessment by the stage II practitioner is the number of scoring 55 if the centred is 91.66% and classified as "excellent". The practitioners are enthusiastic and optimistic about carrying out all the activities that are available on the SKH, even offering their institutions to be a test site.

Based on the results of the analysis, then the details of the revisions needed to be done are: in the opening activities, aspects of development and indicators, development strategies (materials, methods, media and learning resources), learning experiences and sequences activities, developmental assessment, and closing activities.

Effectiveness Test

At this stage, researchers investigated the observation of the game activities performed by children using The game puppet film (experimental groups) and traditional film puppets/*Pipileman* (control groups). The results of research evaluation focused on testing the significance of control groups and experiments.

To investigate the effectiveness of the control and experimental groups, evaluation is done. The test of the significance of these groups is explored to answer the hypothesis: (1) Ho: There is no significant difference between the control group score and the Experiment Group, (2) H1: There is a significant difference between the control group score and the experiment Group.

Table 2: Statistical Test of the Experimental and Control Group

	Score
Mann-Whitney U	212.500
Wilcoxon W	45.500
Z	-3.122
Asymp. Sig. (2-tailed)	0.001
a. Grouping Variable: CLASS	

The statistical test result is a value of P (0.000) < α (0.05), so Ho is rejected. The results showed that there were significant differences between the control group and the experimental group. This means the use of the game puppet film to give effect on the development of children. The game puppet film can improve achievement indicators of the mulitple intelligences of the child.

Discussion

Model development procedures were by the main focus in this research, i.e. the development of puppet film based game innovation using the multiple intelligences. That is, through program-based multiple intelligence play activities, it has developed a number of characteristics of the program activities have been concluded play following the procedures of the development strategy of the early childhood learning. The model has been developed based on the phases, tasks, characteristic development of children aged 3-6 years, it can optimise the nine multiple intelligences, as well as using a child-centred approach which is characterised by dynamic interactions between teachers and children as well as children with other children.

The game with the media puppet film that developed was following the procedure and characteristics of the learning media development to early childhood learning resource. Namely the media teaching and learning activities; can be used anytime, either used at night or during the day; can be used both outdoors and indoors; form of learning resources are included in the category of equipment (device); the audio-visual media motion; can be used by teachers and children as well as used by children themselves; as one of the early childhood learning media that can improve the intelligence of the plural; one of the media activities that have elements of culture, namely the technique of shadow puppets.

The development of a set of documents written in the form of program planning activities play a script-based intelligence plural for children aged 3-6 years have been in line with the runway and approach learning in early childhood. Based on the findings of the preliminary results of the research, there was no game plan turned out shadow puppet film in the form of a written document. This is not by the research objectives to develop the design of the game puppet film that will be used as one of the media in the process of early childhood learning should be designed with the instructional development procedure.

Through the application of a game-based movie puppet media multiple intelligences in early childhood it turns out to be: Objective/indicators in every aspect of the nine multiple intelligences; the development of the material through the development of a theme; the interactive nature of the medium can be done by the teacher and use of the child; the child can do the practice directly.

Conclusion

Based on preliminary research results, it was obtained that the information that there was no puppet film game design in the form of a written document, only available products in the form of game media *Pipileman*. This means that the model that has been developed is relatively innovative as one of the media learning in institutions PER. Referring to the conclusion of the first round, then the next it was decided to develop a model based on conceptual groundwork about how early childhood learning through play, the learning process to suit the needs and characteristics of early childhood development, the development of 9 multiple aspects of intelligence. All the conceptual grounding is used as the basis for developing a three models, i.e., the conceptual model, a model of procedural and physical models. Model development concretely has resulted in a conceptual model, a media development of puppet film in accordance with the eight characteristics of media including integration competency base and plural aspects of intelligence. The development of learning materials and learning strategy development, play, development of multiple intelligence-based learning play activities. A procedural model, this model of growth not only produces the blueprint (blueprint) but it has also produced instructional design along with its

supporting components with the main focus on the development of multiple intelligence-based skills indicators implemented in daily activities program; and the physical model, a set of game film puppets in the form of a written document, is deployment procedures game media puppets of puppet films film and media itself.

Based on the results of the model development phase proved that the model had been developed by the concept of learning in early childhood, because of all the characteristics of program-based play activities using multiple intelligences can be presented. The application of 9 aspects of this intelligence is manifested into development themes and indicators and the sequence of learning strategies. Based on the results of the field trials were conducted to test the effectiveness of the model in the learning process in children age 3-4 years in group play. Then it can be concluded that the program play activities based on intelligence the plural which has been designed and developed systematically can enhance children's creativity to the achievement of the development of indicators to benchmark the success of this play activity programme.

Recommended

Based on the findings and results of research and development that has been described in the above conclusions, it can be advised of a few things here:

1. Efforts for the development of the media, the findings and the results of this research have also contributed to the development of a learning model that corresponds to the basic concept of early childhood education so that models that have been produced can be one of the alternate media learning in early childhood education.
2. Based on the original, the puppet film based game media intelligence plural for early childhood is an innovation that has multiple intelligence-based learning media to other media because it has a unique technique that combines media shadow puppets and film narrative techniques and how to play the media puppet films.
3. Besides, the theme of the story that is developed for activities in the process of play can be adapted to the daily stories with characters that can be made according to the wishes of children, so that children can do activities to build his own (constructivism).

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