



Mega Monopoly Game for Disaster Mitigation Learning in the Context of Independent Learning for Children Aged 5-6 Years

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ABSTRAK

Kejadian bencana menimbulkan berbagai dampak terhadap korban khususnya anak-anak. Permasalahan di lapangan menunjukkan masih banyak lembaga PAUD yang membutuhkan permainan terkait mitigasi bencana. Pendidikan mitigasi bencana pada satuan PAUD perlu dilakukan untuk membentuk sikap pada anak usia dini. Penelitian ini bertujuan untuk menganalisis bagaimana pengembangan permainan mega monopoly dapat meningkatkan kemampuan menyelamatkan diri dari 5 jenis bencana pada anak usia 5-6 tahun. Penelitian ini tergolong penelitian pengembangan yang dikembangkan dengan menggunakan model ADDIE. Subjek yang terlibat dalam penelitian ini adalah 2 orang ahli dan 48 anak. Pengumpulan data dilakukan dengan menggunakan observasi, wawancara, dan angket, dengan instrumen penelitian berupa lembar validitas media. Data yang diperoleh dalam penelitian kemudian dianalisis dengan menggunakan teknik analisis kuantitatif. Hasil analisis penelitian menunjukkan hasil validasi ahli materi dan permainan PAUD memperoleh rata-rata 92,20% dan 90%. Rekapitulasi hasil uji kelompok kecil sebesar 96,87%, dan uji kelompok besar sebesar 98%. Berdasarkan hasil tersebut maka permainan mega monopoly untuk pembelajaran mitigasi bencana pada anak usia 5-6 tahun dinilai sangat valid dan cocok. Penelitian ini mengandung makna bahwa permainan mega monopoly yang dikembangkan dapat digunakan guru dalam pembelajaran untuk meningkatkan kemampuan menyelamatkan diri ketika terjadi bencana pada anak usia 5-6 tahun.

ABSTRACT

Disaster events cause various impacts on victims, especially children. Problems in the field show that many PAUD institutions still need a game related to disaster mitigation. It is essential to carry out disaster mitigation education in PAUD units to form attitudes in early childhood. This research aims to analyze how the development of the mega monopoly game can improve the ability to save themselves from 5 types of disasters in children aged 5-6 years. This research is classified as a development research developed using the ADDIE model. The subjects involved in this research were 2 experts and 48 children. Data was collected using observation, interviews, and questionnaires, with research instruments in the form of media validity sheets. The data obtained in the research was then analyzed using quantitative analysis techniques. The research analysis results show that the validation results of PAUD material and game experts obtained an average of 92.20% and 90%. The recapitulation results of small group trials were 96.87%, and large group trials were 98%. Based on these results, the mega monopoly game for learning disaster mitigation for children aged 5-6 years is considered very valid and suitable. This research implies that the developed mega monopoly game can be used by teachers in learning to improve the ability to save themselves when a disaster occurs in children aged 5-6 years.

1. INTRODUCTION

Indonesia's territory is at the confluence of 3 tectonic plates, namely Australia, Eurasia and the Pacific, which has resulted in Indonesia becoming a disaster-prone country (Handayani et al., 2022; Solfiah et al., 2021). Based on facts regarding geographical conditions in Indonesia, Indonesia is located in the most active disaster-prone area in the world with a low to high level of disaster threat (Fatmah, 2022;

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Labudasari & Rochmah, 2020; Lestari et al., 2021). One of the regions in Indonesia that often experiences natural disasters is Malang City in East Java Province which is considered to have the potential for disasters such as landslides, tsunamis, tornadoes, floods, earthquakes, and so on.(Sari et al., 2020). Disaster events and impacts in Malang occur quite dynamically and tend to increase both in terms of intensity and quality. This is in accordance with data explained by the Central Statistics Agency (BPS) that there have been 209 disasters in Malang City throughout 2021. Disasters can be defined as an event that causes damage to all existing resources.(Ayub et al., 2021; Rahiem & Widiastuti, 2020). Apart from that, a disaster is also defined as an event that threatens or disrupts people's lives due to human, natural or other factors that can cause death, loss of property, environmental damage and psychological effects on a scale that is greater than the community's natural ability to overcome it, resulting in a disaster. is one of the biggest challenges facing emergency medical service providers(Bouato et al., 2020; Cicero et al., 2017; Husna & Rahiem, 2020).

Psychological impact is one of the after-effects of a disaster that requires a long healing process. This impact not only provides a traumatic and terrifying experience for adults, but also for children. Children as the nation's next generation need special protection and attention in an effort to minimize children becoming victims of disasters(Oktaria et al., 2023; Putri, 2019). This is because children are physically and mentally still dependent on adults. The impact of disasters can be minimized by preventing disasters or what is called disaster mitigation. Mitigation, preparedness, response, and recovery are the four phases involved in the disaster management process(Bagwari et al., 2022; Mariezki et al., 2021). Every region in Indonesia needs to coordinate disaster management(Kastono et al., 2022). Disasters have an influence on children's reactions(Mooney et al., 2021). The current problem is that children are limited in knowing the risks around them which results in a lack of preparedness in facing disasters(Susilo et al., 2017; Yaswinda & Agustin, 2022). This problem was also found in one of the kindergartens in Malang City. Based on the results of observations made at the kindergarten, a problem was found, namely that disaster mitigation learning was only carried out according to the theme in one semester by bringing in related parties such as firefighters. However, this institution does not yet have media that can be used at any time to introduce independent rescue efforts to children in a way that is appropriate for their age. Disaster mitigation activities should be carried out routinely and continuously (sustainable disaster mitigation)(Nugraha et al., 2020; Setiono, 2021). Implementation of disaster mitigation can be carried out in school institutions with assistance from teachers and related institutions in disaster risk reduction efforts. Efforts to educate children about disasters from an early age are important not only for curriculum development, but also to prevent children from becoming victims if a disaster occurs(Kartika et al., 2023; Mujiburrahman et al., 2020). This ensures that children will be better prepared to face any disasters in the future.

Based on these problems, one way to increase children's understanding regarding disaster mitigation is with game media. This is because early childhood has various characteristics. One of the activities that young children like is playing. Play is a world for children. Through play, children can receive various stimuli that can be beneficial for their lives in the future(Pahrul & Amalia, 2021; Rosiyanah et al., 2020; Syamsurrijal, 2020). In general, children enjoy play activities and games because by playing children can learn to understand the surrounding environment, which activities are carried out happily, without coercion, full of imagination, and using all parts of the body.(Hayati & Putro, 2017; Veronica, 2018; Zosh et al., 2018). One of the games that teachers can use for disaster mitigation learning activities is the monopoly game. Monopoly game is a game in the form of a board that aims to collect wealth involving an economic system, namely buying, renting, exchanging using play money.(Adawiyah et al., 2022; Khasanah et al., 2018). The mega monopoly game that was developed has been adapted to five types of disasters that often occur in various regions of Indonesia. The mega monopoly game is a game in the form of a board game which is equipped with various additional media such as life jackets, tents, disaster puzzles, first aid kits, dice, challenge cards and opportunity cards, as well as colorful cones as support in playing the mega monopoly game.(Adawiyah et al., 2022; Nurhasanudin & Syah, 2022). In the game board and guidebook this game is given the name "motana" which is an abbreviation for disaster response monopoly, which in this game contains five types of disasters with different disaster safe locations according to the placement of the color of the cone. This game is large and can be used by up to 10 children. This game is played individually and in groups as contained in the cards provided, so it will provide a fun learning experience that is adapted to one of the big themes in the implementation of the independent curriculum, namely playing and working together. Several previous studies have revealed that the monopoly game developed for learning about disaster mitigation has the advantage of making it easier for children to learn about various types of disasters and how to save themselves from these disasters.(Ardini et al., 2022; Pataha & Suni, 2021). The results of other research reveal that the STAD model assisted by monopoly media is effectively used to increase student learning activity on the sub-

theme of the benefits of plants for human life in class III elementary school. (Novianti et al., 2022). The results of other research reveal that the media motif (educative monopoly) in multiple intelligence-based learning for group B kindergarten children is in the valid category, so it is very worthy of development. (Maqfiroh et al., 2020). Based on several research results, it can be said that monopoly media is in the valid category so it is very worthy of development. It's just that in previous research, there have been no studies that specifically discuss the development of the mega monopoly game for learning disaster mitigation in the context of independent learning for children aged 5-6 years. So this research is focused on this study with the aim of testing the effectiveness of the mega monopoly game for children aged 5-6 years which is adapted to one of the big themes in the implementation of the independent curriculum, namely playing and working together to increase understanding of disaster mitigation for children aged 5-6 year.

2. METHOD

This research is classified as an R&D (Research and Development) type of research with a qualitative and quantitative approach. This development procedure uses the ADDIE model which includes five stages, namely, analysis, design, development, implementation and evaluation. (Wisada et al., 2019). The subjects in this study were 2 validator experts and 48 children aged 5-6 years. The techniques used in collecting data are interviews, observation and questionnaires. Observations and interviews were carried out to determine problems and needs in the field. A questionnaire was conducted to collect validation results from early childhood play experts and learning experts as well as respondents. This research and development data includes qualitative and quantitative data types. Qualitative data is obtained from input to improve monopoly game products by material experts, game experts and users. Meanwhile, quantitative data was obtained from the results of a monopoly game validation questionnaire by material experts, game experts and users. The research and development instrument grid is presented in Tables 1, 2, and 3.

Table 1. Material Expert Grid

| No | Assessment Aspects |
|----|---|
| 1. | The effectiveness of the mega monopoly game when used in accordance with the needs of the big theme of implementing the independent curriculum (playing and working together). |
| 2. | The efficiency of the mega monopoly game (clarity of material on 5 types of disasters) is in accordance with the physical, motor and cognitive development characteristics of kindergarten children aged 5-6 years. |
| 3. | The attractiveness of the form and components of the mega monopoly game in improving the exploration abilities of children aged 5-6 years. |

Table 2. Early Childhood Education Expert Grid

| No | Assessment Aspects |
|----|--|
| 1. | Effectiveness of using the mega monopoly game (tools and measurements) that are suitable for children aged 5-6 years. |
| 2. | The efficiency of using the mega monopoly game in the various activities contained in it is suitable for children aged 5-6 years. |
| 3. | The attractiveness of the design and harmony of the Mega Monopoly game components (design, size and color combination) is suitable for kindergarten children aged 5-6 years. |

Table 3. User Grid

| No | Assessment Aspects |
|----|--|
| 1. | The effectiveness of the mega monopoly game is based on one of the big themes of the independent curriculum (learning and working together), namely the suitability of activities with materials and ways of playing that are appropriate to the abilities of children aged 5-6 years (not too easy or difficult). |
| 2. | The efficiency of the mega monopoly game when used by children aged 5-6 years (ease of the game, clarity of how to play, and game safety) in disaster mitigation learning activities. |
| 3. | The attraction of the mega monopoly game when used to explore 5 (five) types of natural disasters for children aged 5-6 years (feeling enthusiastic, playing for a long time, happy and focused). |

Testing the validity of the game is carried out by PAUD game experts and learning experts. The analytical method for conducting validity tests uses theory. Validity results are grouped on a scale which includes very valid, valid, quite valid, and less valid. The techniques used in processing data are qualitative and quantitative analysis. Qualitative analysis is obtained from suggestions, responses and criticism. Meanwhile, quantitative analysis is obtained from calculations obtained from instrument data.

3. RESULT AND DISCUSSION

Result

The development of the mega monopoly game uses the ADDIE research and development model with five stages, namely analysis, design, development, implementation and evaluation. The procedures carried out in this research and development are as follows: in the first stage, namely the analysis of game tools. The results of the analysis are in the form of data obtained to design games that suit your needs. At this stage the main thing that researchers do is carry out a needs analysis of the activities and games used for disaster mitigation learning. Based on the results of observations made on teachers and school principals, it is known that there is a problem with the absence of games to support disaster mitigation learning. Disaster mitigation activities are only carried out in accordance with the theme used by inviting several related parties to carry out a simulation of saving themselves from a disaster. In this way, the product that will be developed by researchers is expected to provide benefits to the learning needs for disaster mitigation in kindergarten institutions. The results of the analysis are then designed into an application as a game design for learning disaster mitigation for children aged 5-6 years.

Second stage namely planning (design). At this stage, the mega monopoly game is designed based on the analysis that has been carried out previously. The design of the mega monopoly game is done by sketching 40 boxes on the game board and randomly inserting pictures of five types of disasters and two cards with different functions. The design is made as attractive as possible so that it can attract children's attention and interest in playing. Apart from that, in the middle of the game board there is a barcode that is connected to a digital guidebook that can be used by educators to access how to play and the assessment rubric. Other media added to this game are disaster puzzles, dice, challenge and opportunity cards, tents, colorful cones, first aid boxes and their contents, and life jackets. The third stage is development. At this stage, the mega monopoly game product is developed according to the design created at the design stage. The results of the development of the mega monopoly game can be seen in Figure 1.



Figure 1. Results of the Development of Monopoly Media

The media that has been developed is then tested for validity to determine the suitability of the product that has been developed. The results of the material expert analysis obtained a percentage of 92.20% so that the mega monopoly game is included in the very valid category and suitable for use. Meanwhile, the analysis results from PAUD game experts obtained a percentage of 90% so that the Mega Monopoly game is included in the very valid category and is suitable for use. Based on the results of the validator instrument data presentation, it shows that the mega monopoly game can help children learn to

mitigate disasters which are linked to the latest curriculum, namely the independent curriculum, to be applied in learning at PAUD institutions. **Fourth stage** is the implementation stage. The activities carried out at this stage are carrying out trials on the products that have been developed. The aim of this stage is to determine the effect of the product being developed on the quality of disaster mitigation learning for children aged 5-6 years. The small group trial stage involved 8 children aged 5-6 years, while the large group trial involved 48 children aged 5-6 years at the Saleh Children's Kindergarten, Malang City. During the trial, activities were carried out indoors and outdoors depending on the situation and weather conditions. The fifth stage is evaluation which is carried out in a formative manner. Formative evaluation is carried out to evaluate products that have been developed by collecting data using product feasibility test questionnaires by material experts and PAUD game experts, children do small group trials, and large group trials. The purpose of evaluation is to find out product deficiencies so that product improvements and improvements can be made. At the analysis stage, namely evaluating the needs of children and teachers using a structured interview method, at the design stage evaluating the components in the game that are needed in product development. At the development stage, evaluations are carried out based on suggestions and input from experts and children through small group trials and large group trials. The suggestions and input provided will be used as a reference in making product improvements so as to produce a product that is suitable for use.

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Discussion

One of the big themes contained in this game is learning and working together. This game contains many activities that require cooperation between players. This is contained in the cards that have been developed, such as helping a friend put plaster on the injured part, helping a friend put on a life jacket, holding a friend to run to a safe location and many others. This game is considered effective because it can help children know and understand natural disaster mitigation material. Efficiency is obtained from creating a learning atmosphere that can be used anytime and anywhere. And the interest is obtained from the color of the game board produced, the interesting pictures and the additional media such as dice, tents, puzzles, giant cards, first aid kits, cones and life jackets. The input given from the two experts is that researchers need to pay attention to the quality of the materials used so that they can last a long time to be used as learning media in PAUD institutions. Making learning media must of course pay attention to several principles, such as the games created should be useful for studying various aspects of children's development and can be played repeatedly depending on the planned topic, the materials are cheap and easy to get at PAUD institutions, or they can be made yourself, avoiding the use of other materials. materials that pose a threat to children, can be used for experimentation and exploration, arouse fantasy and imagination, and can be enjoyed by children as a form of entertainment, adapted to purposes and resources, can be used classically or in groups, (Adawiyah et al., 2022; Khasanah et al., 2018; Zaini & Dewi, 2017). The results of the research analysis show that the mega monopoly game is suitable for use in PAUD institutions in the learning process for children aged 5-6 years and can make children motivated and interested in carrying out play activities. These results show that the mega monopoly game

has characteristics that can attract children to play, thereby making them motivated to carry out playing activities (Kuswanto & Suyadi, 2020; Ridwan et al., 2020). The design and choice of colors in the Mega Monopoly game are very carefully considered, especially the materials used (Adawiyah et al., 2022; Nurhasanudin & Syah, 2022). The choice of colors in the Mega Monopoly game is adjusted to the child's characteristics, so that the child will easily understand the picture. Furthermore, the results of the research analysis show that the mega monopoly game is suitable for use in the disaster mitigation learning process and is easy for children aged 5-6 years to understand. This is because the design and additional media used in the Mega Monopoly game are made according to the age and character of children aged 5-6 years. Through children's real experience in carrying out self-rescue efforts, this game makes it easier for children to become skilled in disaster mitigation efforts. This game is played by a minimum of 4 people, because in this game there are challenge and opportunity cards that allow children to carry out play activities and work together with their friends. This learning process can certainly support the concept of independent learning in the big theme of implementing the independent curriculum, namely playing and working together. Furthermore, this provides various benefits to young children in carrying out simple disaster mitigation efforts through playing experiences (Budiwaluyo & Muhid, 2021; Pahrul & Amalia, 2021; Rosiyana et al., 2020; Syamsurrijal, 2020).

The results obtained in this research are in line with the results of previous research, which also revealed that the monopoly game developed for learning disaster mitigation has the advantage of being able to make it easier for children to learn about various types of disasters and efforts to save themselves in these disasters (Ardini et al., 2022; Pataha & Suni, 2021). The results of other research reveal that the STAD model assisted by monopoly media is effectively used to increase student learning activity on the sub-theme of the benefits of plants for human life in class III elementary school (Novianti et al., 2022). The results of other research reveal that the media motif (educative monopoly) in multiple intelligence-based learning for group B kindergarten children is in the valid category, so it is very worthy of development (Maqfiroh et al., 2020). So based on several research results, it can be said that monopoly media is in the valid category and is therefore very worthy of development.

4. CONCLUSION

Based on the results of data analysis and discussion, it can be concluded that the mega monopoly game is suitable for use in increasing knowledge of disaster mitigation through playing experiences that are adapted to the character and age of children 5-6 years old. This game can be used by teachers to create a fun learning atmosphere for children so that it is easy for them to understand.

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