Development of Snakes and Ladders Game (Disaster Response) as Earthquake Mitigation for Children 5-6 Years in Palu City

By:

Besse Nirmala
Background

• BNPB recorded the number of victims caused by the earthquake, tsunami and liquefaction around 2,113 people

• Children are the most vulnerable victims when a disaster occurs

Introduction to disaster mitigation in early childhood education

Preliminary Study involving 24 teachers

<table>
<thead>
<tr>
<th>No</th>
<th>Pertanyaan</th>
<th>Item Jawaban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Ya</td>
</tr>
<tr>
<td>1</td>
<td>Pemahaman tentang mitigasi bencana</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>Pernah menerima sosialisasi tentang mitigasi bencana</td>
<td>21</td>
</tr>
<tr>
<td>3</td>
<td>Pernah menyampaikan wawasan kebencanaan</td>
<td>13</td>
</tr>
<tr>
<td>4</td>
<td>Pernah memberikan kegiatan bermain terstruktur terkait mitigasi bencana pada anak</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Terdapat pemahaman terkait mitigasi bencana pada kurikulum yang dikaitkan pada tema</td>
<td>1</td>
</tr>
</tbody>
</table>

Development of snake and Ladder game (Disaster Response) as Earthquake Mitigation for Children.
1. How is the practicality of the game of ladder snake as earthquake disaster mitigation in early childhood?
2. How is the attractiveness of the game of ladder snake as earthquake mitigation in early childhood?
3. How is the feasibility of the game of ladder snake as earthquake mitigation in early childhood?

To develop the Snake and Ladders game as a practical, interesting and suitable earthquake mitigation for early childhood in Palu City.

1. An educational game tool for earthquake disaster mitigation is the Snakes and Ladders game.
2. Guide to using the snake ladder game as an earthquake disaster mitigation in early childhood.
3. Teaching Materials Earthquake Mitigation for Early Childhood
4. Scientific articles in international journals

Snakes and ladders game as earthquake disaster mitigation is expected to be able to assist teachers in developing programs and learning activities through playing integrative holistic disaster mitigation in children.
Research Methodology

The stages of this research and development are as follows:

1. Studi Pendahuluan (Penelitian dan pengumpulan data)
2. Perencanaan
3. Pengembangan Produk Awal
   - Validasi Materi
   - Validasi Media
   - Validasi instrumen
4. Uji coba lapangan awal
5. Merevisi hasil uji coba
6. Uji coba lapangan
7. Penyempurnaan Produk hasil uji coba lapangan
8. Uji pelaksanaan lapangan
9. Penyempurnaan produk akhir

Skema Prosedur Penelitian Pengembangan yang diadaptasi dari Borg and Gall 1989
Research Location and Time

Research Location

The research location involved three kindergartens namely IT Pelita Hati Kindergarten, Putra Kaili Permata Bangsa Kindergarten, and Khalifah Kindergarten

Time Research

The time of this research is on May - October 2019
Prototype Snakes and Ladders Development

Studi Pendahuluan Analisis Kebutuhan → Pengembangan konten dan instrumen bahan pembelajaran

Pengembangan Bahan Pembelajaran

1. Membuat draf Mendownload video animasi
2. Mendesain papan dan dadu ular tangga
   - Buku panduan Guru
   - CD Animasi (Lagu-lagu)
   - CD Animasi (Vidio)
   - Ular Tanga Tabe

Menetapkan Evaluasi Formatif
A. Validasi pakar
B. Uji Skala Kecil
C. Uji Skala Luas
D. Uji Performan

Revisi

VALIDASI PAKAR

Pakar kebencanaan → Pakar pendidikan Anak Usia Dini → Pakar Media

Revisi 1 → Revisi 2 → Revisi 3

Revisi Final Permainan Ular Tangga Tabe sebagai Mitigasi Bencana Gempa Bagi Anak Usia 5-6 Tahun

Gambar 2. Prototype Pengembangan Permainan Ular Tangga Tabe
<table>
<thead>
<tr>
<th>Snake and Ladders Tables Before try</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Berlari-ler di tempat</strong></td>
</tr>
<tr>
<td><img src="image1" alt="running girl" /></td>
</tr>
<tr>
<td><strong>Berjalan jongkok dengan tangan melindungi kepala</strong></td>
</tr>
<tr>
<td><img src="image3" alt="jumping feet" /></td>
</tr>
<tr>
<td><strong>Posisi Tengkurap dengan tangan melindungi kepala</strong></td>
</tr>
<tr>
<td><img src="image3" alt="jumping feet" /></td>
</tr>
<tr>
<td><strong>Gempa... Apa yang kamu lakukan?</strong></td>
</tr>
<tr>
<td><img src="image4" alt="question mark" /></td>
</tr>
<tr>
<td><strong>Posisi Tengkurap dengan tangan melindungi kepala</strong></td>
</tr>
<tr>
<td><img src="image3" alt="jumping feet" /></td>
</tr>
<tr>
<td><strong>Posisi jongkok dengan tangan melindungi kepala</strong></td>
</tr>
<tr>
<td><img src="image3" alt="jumping feet" /></td>
</tr>
<tr>
<td><strong>Sebutkan nomor telepon salah satu anggota keluargamu?</strong></td>
</tr>
<tr>
<td><img src="image6" alt="phone" /></td>
</tr>
<tr>
<td><strong>Melempar Dadu</strong></td>
</tr>
<tr>
<td><img src="image8" alt="dice" /></td>
</tr>
<tr>
<td><strong>Kamu sedang berada di gedung yang tinggi. Tiba-tiba gedung tersebut bergoyang dengan kencang. Apa yang kamu lakukan?</strong></td>
</tr>
<tr>
<td><img src="image3" alt="jumping feet" /></td>
</tr>
</tbody>
</table>
Product Development Results

**Snakes and Ladders Disaster Response Board**

![Snakes and Ladders Disaster Response Board Image]
Product Development Results

Dice

Pawn
Product Development Results

Textbooks

Guide to using the Snakes and Ladders Game
Limited Field Trials

IT Pelita Hati Kindergarten
Involving 20 children
- The results of practicality analysis (feasibility) of the table ladder snake game media as earthquake disaster mitigation for children aged 5-6 years in the city of Palu for each observation indicator has an average of 3.04 or are in the category of "implemented".
- The results of the feasibility analysis of the game of ladder snakes as earthquake disaster mitigation for each aspect of observation have an average of 3.63 or are in the "feasible" category.
1. The results of practicality analysis (feasibility) of the game of ladder snake as a disaster mitigation for children aged 5-6 years for each aspect of observation have an average of 3.54 or are in the category of "implemented".

2. The results of the feasibility analysis of the game of snakes and ladders for each aspect of observation have an average of 3.8 or are in the "feasible" category.
Operational Field Trials

Khalifah Kindergarten

• The results of practicality analysis (feasibility) of the game of ladder snake as a disaster mitigation for children aged 5-6 years for each aspect of observation have an average of 4.1 or are in the category of "implemented".

• The results of the feasibility analysis of the game of ladder snakes for each aspect of observation have an average of 3.9 or are in the "feasible" category.
Conclusions and suggestions

Conclusions
The snake and ladder game was developed using the R&D research model of the Borg & Gall Model which includes ten stages of development. Stage (1) conducting research and data collection in the field through preliminary studies; (2) planning to make a game design of the tabe ladder snake and other supports; (3) developing a game of snakes and ladders which is then validated by material, media and disaster validators; (4) conducted an initial field trial involving 20 children in IT Pelita Hati Kindergarten by obtaining an average result of 3.63 with the criteria of "feasible", (5) the revision of the results of the initial field trial did not exist on the physical media only only improvements were made to the learning process, (6) the main field trial involving 20 children in three PAUD institutions in Palu City, namely Putra Kaili Permata Bangsa Kindergarten with an average of 3.8 with the criteria of "feasible", TK Khalifah with an average of 3.9 with "feasible" criteria, (7) revision of the results of the main field trials, (8) operational field trials (trials try implementation) which involved 20 children, and (9) the final product in this study is the game of ladder snake that is suitable for use in the learning process in kindergarten.

Suggestion
Further researchers or developers are expected to be able to develop more models of disaster mitigation or child preparedness in facing disasters so PAUD teachers can implement the learning process in a number of themes in kindergarten institutions. Teachers / teachers are expected to be able to use and utilize learning media, namely the snakes and ladders game in the learning process in class so that children get knowledge related to disaster mitigation. For children, it is hoped that the game of snakes and ladders can be used and utilized well for fun play activities.
Thank You!

www.themegallery.com