IMPLEMENTATION OF EDUCATIONAL GAME "FIRE MITIGATION" AUDIO BASED FOR BLIND PERSONS DISABILITIES WITH MDA FRAMEWORK METHOD

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ABSTRACT

Fire is disaster with the largest percentage, in matter this is the victim, isn't it just public general living normally, but sometimes there are also friends disabilities who are victims. Mitigation disaster fires in urban areas for sufferer disability still focus on socialization shaped descriptive. Even though sufferer disability is the most vulnerable groups moment happen disaster. One of the group disability are the tuna. Along with with rapid development of media and technology, disability blind now start can using a smartphone that can emit voice for navigation. Then it was found problem in the form of "how understanding group blind related mitigation disaster specifically fire based on application education". In context activity devotion public this, we do activity located at SLB-A Pembina Tingkat Nasional Jakarta. With have a basic idea in the form of innovation in designing educational games for group blind. In matter this we will focus on design design made with to apply approach LeBlanc MDA Framework method. Approach this is a method consisting of from three components main namely Mechanics, Dynamics and Aesthetics for see experience user when interact with devices, one of which is educational games. So that expected with the existence of educational games This can make means learning for group blindness and prevention beginning to disaster fire.

Keywords: disaster, fire, educational games, blind

INTRODUCTION

When we speak cities big so no will escape from threat disaster. One of the city big is Jakarta, where the amount diverse population come to Jakarta. With dense resident this, sometimes potential threat disaster no can have avoided. The Central Statistics Agency (BPS, 2020) noted that the city of Jakarta is province with density resident the highest in Indonesia at 15.97 thousand souls per square meter. According to Regulation Governor (PERGUB DKI, 2024) regarding plan countermeasures disaster, exposing that priority main the disaster in Jakarta is fires in urban areas. While according to (Md. Hossain & Smirnov Oleg, 2023), density population and settlements have very influential big to the occurrence fire in the settlement. In 5 years Lastly, (BPBD. DKI) noted fire is disaster with the largest percentage, even in 2019 there were 726 cases with total loss worth Rp447,997,100,000, injured victims 34 people, injured light 163 people, 21 deaths, 12,325 refugees and 63 locations refugee. In matter This, the victim is not just public general living normally, but sometimes there are also friends disabilities who are victims.

Until now, mitigation disaster fires in urban areas for sufferer disability Still focus on socialization shaped descriptive. Even though sufferer disability is the most vulnerable groups moment happen disaster (BNPB, 2018). One of the group disability are the blind, statistics show that disability blind people in Indonesia occupy position First with amount highest which is 8.36% compared to with type disability others (BPS, 2015). This show that need existence serious support to mitigation disaster for group disabilities, in particular disability blind. But moment This mitigation fire for group disability blind Still very minimal. Mitigation fire very important for reduce loss social and economic as well as avoid the number of fatalities (Feng & Sun, 2023). The number of fatalities and material losses in incident disaster including fire, due to lack of understanding government and the lack of awareness public will potential vulnerability as well as effort mitigation disaster (Albizzia et al., 2022).

Along with rapid development of media and technology, disability blind now start can use gadget (smartphone) which can emit voice for navigation. Although Still Lots Features technology that has not been can accessed by group blind. This is because of limitations access between group disability with normal people, one of them can see from lack of application education for group related blindness with mitigation disaster. Based on the explanation that has been explained, then it is found problem in the form of: How understanding group blind related mitigation disaster specifically fire based on application education. In context activity devotion public this, we do activity located at SLB-A Pembina Tingkat Nasional Jakarta. With have a basic idea in the form of innovation in to design educational games for group blind. Educational games give various benefit like increase effectiveness learning, interest, motivation, reducing time learning and burden teacher (Ulya et al., 2023). In the learning process, no seldom participant educate

experience difficulty in understand material learning (Octanto, 2021). Support learning in form educational games can become solution for student blind for increase motivation learning (Miswanto & Halim, 2023). Support learning in form educational games can become solution for increase motivation group blind in the area urban in prepare mitigation disaster especially disaster fire. So that expected with existence educational games This can make means learning for group blindness and prevention beginning to disaster fire.

METHOD

In do educational game design mitigation disaster this, we develop reference previously which has there is. First our reference is from research conducted by brother Jatmiko from Gajah Mada University entitled "Use Interactive Game Methods for Education Brushing Teeth Against Dental and Oral Hygiene and Gingival Health in Blind Children" (Jatmiko et al., 2024). The results obtained in study This is show average and standard difference score cleanliness tooth with use interactive game method for education rub teeth that have made can increase cleanliness teeth and mouth as well as gingival health in groups child blind. Research This become our reference in to design games education in context interactive, but game made by brother Jatmiko, has difference with the plans we made. Where in the game design that we will make using gadget (smartphone) which can output audio as means main in playing educational games, while what is done you Jatmiko No focus on gadgets (smartphone) and audio.

References furthermore from Zulfina who did study titled "Disaster Mitigation for Students with Intellectual Disabilities" in 2024. Research the done for increase understanding evacuation emergency disaster nature in children intellectual disabilities among parents, teachers, and BPBD with method psychoeducation and focus group discussion (FGD). The results of study the show existence improvement parents ' and teachers' understanding of mitigation disaster (Zulfina et al., 2024). The research conducted Zulfina, has a number of relatedness with our concept, where we want to increase understanding mitigation disaster group disability. Different with study Zulfina, in this PKM, the subject our research is group child blind while in the research Zulfina subject his research are teachers and parents of students, even though teachers and parents of students do not always present If a moment happen disaster.

Next, what becomes our reference from The Wedyawati with title "Application Design of Gamikar (GAMIKAR) to Improve Understanding of Fire Mitigation Elementary School Students". The results say that mitigation game fire (GAMIKAR) shows that understanding student about mitigation fire in the experiment group own significant difference between group control and experiment on pretest and posttest (Wedyawati et al., 2021). Study the own relatedness with with PKM this time Where objective the main thing is for increase understanding mitigation disaster fire through educational game media. The difference is lies in the subject study Where this time 's research Respondent is group blind people who become group prone to.

With understand concept references said, then we will be designing educational games audio based related with disaster fire for disability blind. In matter this we will focus on design design made with to apply approach LeBlanc MDA Framework method. Approach This is a method consisting of from three components main namely Mechanics, Dynamic and Aesthetics (Thabathaba'I et al., 2024). There are also steps to be taken in devotion public This in designing educational games mitigation disaster fire as following:

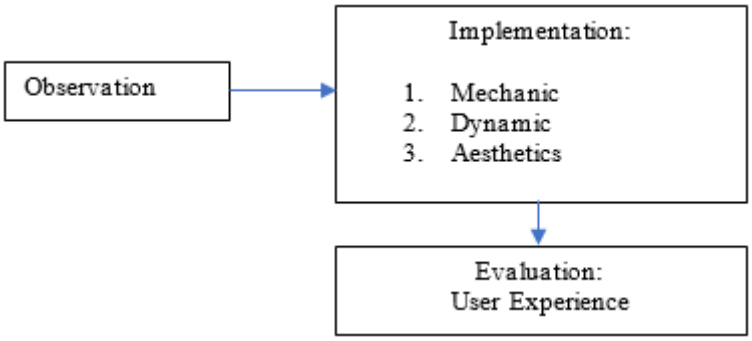

Figure 1. Educational Game Design Model Mitigation Disaster Fire

First step: Representative team do observation to location partner namely SLB-A Pembina Tingkat Nasional Jakarta. Here representative team collect data in the form of problems encountered about students understanding related with prevention disaster around environment, one of them is fire.

Step two: The team searches similar references with problems encountered, then looking for difference (GAP) from reference said. Next team formulate the approach used in do implementation with use approach mechanics, dynamics and aesthetics in to design games education for mitigation disaster fire.

Step three: The team carries out test tool props in the form of educational games to the student's disability blind people at SLB-A Pembina Tingkat Nasional Jakarta, with see from experience user in the form of reaction when interact with tool props.

RESULTS AND DISCUSSION

Results

Based on activities carried out, obtained findings results evaluation activity as following:

a) Learning process related with material mitigation disaster specifically fire with game media education based on audio, participants understand with fast form audio in games.
b) Besides it's a vibration sensor in Educational games also make it easier student in answer every existing questions.
c) Design educational games mitigation disaster fire this, can increase understanding student about steps to be in the middle disaster fire in form interactive audio based on educational games.

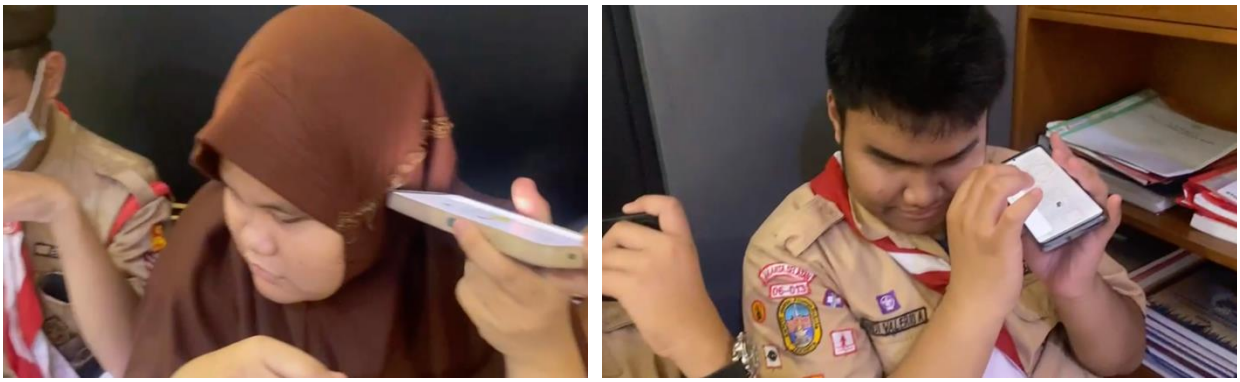

Figure 2. Teaching Aids Evaluation Process in the form of an educational game Mitigation Fire

From the results evaluation activity so in implementation design educational games mitigation fire based on audio obtained in the form of a reaction experience user in form training senses hearing for get an information. Where the students This used to with intonation fast sound in comparison intonation normal sound when they interact with tool props that can emit sound. Here the behavior they do is listen voice with speed up rhythm audio in the game.

Discussion

Discussion in devotion public This is with interaction experience user namely the SLB-A Pembina Tingkat Nasional Jakarta, when interact with visual form in educational games mitigation fire. Then form interaction we translate this to in MDA Framework approach. Approach This is a method consisting of from three components main namely Mechanics, Dynamic and Aesthetics in measure interaction experience user with device, in matter This is educational games. The results discussion that was obtained as following:

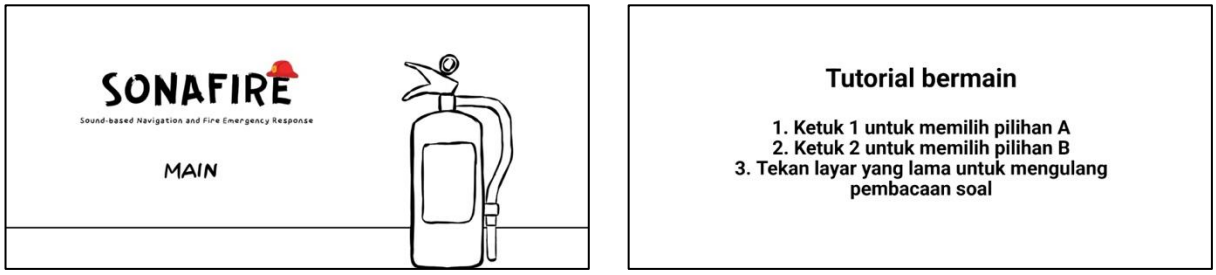

Figure 3. Display Mechanics in Educational Games Mitigation Fire

The image above is appearance Mechanics in educational games mitigation fire. Mechanics in context This is an explanation or regulation for play the game. In translate Mechanic This for the players blind, team devotion public have a basic idea merge senses touch and hearing in educational games fire. Conception merger This, we design in form gesture tactile (touch) in application game. Then we also added an explanation in form sound, where from beginning players game blind will be asked follow Instructions in form voice for start game. With thus functionality in context Mechanic can functioning with Good when the players blind play educational games fire.

Figure 4. Display Dynamic in Educational Games Mitigation Fire

The image above is appearance from Dynamic in educational games mitigation fire. Dynamic in matter This is results interaction player inside game. Where the dynamics will determine about What is happens to the player moment mechanism work. On the application dynamics in devotion public this, team translate become a draft narrative story in form text in the form of question audio. With concept like this, flow game will have formed with Good for the players blind without existence obstacle when play educational games mitigation fire.

Figure 5. Experience Users in the form of Aesthetics Interaction

The image above is experience user in form Aesthetics interaction. Where the users do interaction with the system Mechanic game in the form of rule games and dynamics channel game in the form of narrative story in form text audio. In context aesthetics this, the experience felt give birth to form a sensation in the form of interaction between man with device (technology). Every interactions present in self user is a form representation experience life, things This due to habit (habits), past memories or curiosity in self somebody about a new thing. So in the end bring up form performance experience user in form aesthetics interaction games.

CONCLUSION

Conclusion from activity devotion public This is when We will produce application game with see context experience user should a designer games see from sides humanity. Why matter This need done for designers games, because the users game not only from public normal general, but friends disability also plays a role games. With thus element accessibility and functionality in a game need see sensation experience users. Future hopes more and more Lots games in form education for users disability.

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