

ABSTRACT

DESIGN AND DEVELOPMENT OF HYDROMETEOROLOGICAL DISASTER MITIGATION SIMULATION EDUCATIONAL GAMES FOR BADAN METEOROLOGI KLIMATOLOGI DAN GEOFISIKA (BMKG) USING THE GAME DEVELOPMENT LIFE CYCLE (GDLC) METHOD

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Natural disasters are a series of events that can disrupt or threaten life and infrastructure. In Indonesia, natural disasters such as earthquakes, landslides, floods and forest fires often occur. Hydrometeorological disasters, which are influenced by climate change such as the El Niño and La Niña phenomena, including floods and landslides, are one of the types of natural disasters that have occurred most frequently in the last decade. The impact of this disaster includes physical damage, economic disruption, and significant loss of life. Disaster mitigation education is very important to reduce the negative impacts of disasters. However, integration in the curriculum is often less effective and interesting. Therefore, innovative approaches such as interactive educational games can take advantage of the younger generation's interest in technology and digital games to increase awareness and knowledge about disaster mitigation. This research focuses on developing a hydrometeorological disaster mitigation game using the Game Development Life Cycle (GDLC) method for the Meteorology, Climatology and Geophysics Agency (BMKG). The aim of this research is to develop an interactive game that not only increases public understanding of hydrometeorological disaster mitigation, but also supports BMKG in disseminating important information through game learning media. Test results show that all functionality and features in the game work well. Usability testing shows the level of ease of use, good performance, efficiency in using features, and a high level of user satisfaction. This game is effective in increasing understanding of hydrometeorological disaster mitigation and supporting disaster prevention efforts in Indonesia .

Keywords: Simulation Education Game, Game Development Life Cycle, Mitigation Disasters, Hydrometeorological