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Analysis of needs for the development of earthquake disaster mitigation animation videos for disabilities elementary school children

Adik Ismail *, Ika Candra Sayekti, Siti Azizah Susilawati, Dias Aziz Pramudita
Universitas Muhammadiyah Surakarta, Indonesia
* Corresponding Author. E-mail: A610180046@student.ums.ac.id

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ABSTRACT

Earthquakes are frequent disasters in Indonesia. This disaster often causes many fatalities, so reducing the risk of an earthquake is necessary. Disaster risk reduction can be carried out with government programs, namely disaster risk reduction education which aims to reduce the threat of victims due to disasters. However, in implementing this program, there are deficiencies in media accessibility and learning media for elementary school children with disabilities. The purpose of this study was to describe the results of the needs analysis for the development of earthquake disaster mitigation animation videos. This research is a type of qualitative research. The data from this study were obtained from filling out a needs analysis questionnaire by 161 students and 121 teachers from 13 special schools in Klaten Regency, data analysis using interactive analysis. Based on the results of filling out the questionnaire to analyze the needs of students and teachers, it is known that students and teachers of SLB throughout Klaten Regency need an animated video on earthquake disaster mitigation to become one of the learning media. Students agree as much as 97.70%, and teachers agree as much as 99.20% to develop an animated earthquake disaster mitigation video. The development of earthquake disaster mitigation animation videos must follow the needs of students and teachers regarding material, language, presentation, and graphics.

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INTRODUCTION

Earthquakes are natural disasters caused by the sudden release of energy beneath the surface, creating seismic waves. Klaten Regency is one of the districts located in Central Java which has complex physical and social geographic conditions, causing a high threat of disaster in the Klaten region (Kurniawan et al., 2017). The biggest earthquake disaster in Klaten Regency occurred in 2006; this disaster caused many fatalities, with 1,064 dead and 18,127 injured. The threat of an earthquake significantly impacts people's lives in Klaten Regency.

The high risk of disaster threats in the Klaten Regency area causes a danger to the safety of human life, especially for disaster-prone groups. High disaster risk in the community needs to be managed for vulnerable groups, namely groups of people at high risk because they are in situations and conditions that cannot prepare themselves to face disaster risks or disaster threats where one of

the disaster-prone groups is people with disabilities/disabilities (Hayati et al., 2021). Persons with disabilities have the same rights as other people in general. Therefore, every human being has another obligation to respect the rights of people with disabilities (Abriansyah et al., 2019). Students with disabilities have different characteristics, so something must be different too. Students with disabilities must be prepared to live in a world of inclusion, one of which can be started with inclusive education (Rizky, 2014).

Persons with disabilities have different levels of vulnerability from one another. An inadequate social environment can cause the vulnerability of persons with disabilities, problems in the economic sector, and physical limitations (Boon et al., 2014). Reducing the level of vulnerability for persons with disabilities can be done by implementing Disaster Risk Reduction (Siregar & Wibowo, 2019). Disaster adaptation and mitigation of disabilities in Klaten Regency has developed a disaster learning system with e-learning for the disabled (Sipakdedifa). Sipakdedifa is a disability information medium in Klaten Regency which is web-based and is currently being developed through migration from an Android application-based website.

The Sipakdedifa android application has some content contained in the application, one of which is a video about disaster mitigation for children with disabilities. Disaster mitigation for disabilities through Sipakdedifa will be more usable and acceptable for disabilities if learning content can be accessed easily through videos in an Android-based application so that disaster mitigation material can be studied anywhere and anytime easily. One component of video development in the Android application through Sipakdedifa is the development of earthquake disaster mitigation videos for elementary school disabilities in the Klaten Regency using audio and visually animated videos. Animated video media is one of the efforts to assist in understanding the adaptation and mitigation of earthquake disasters. Audio-visual media is a form of combined learning media between audio and visual media that can display pictures and. sound to stimulate students to pay attention to learning (Rosantiana, 2016).

The animated video was chosen for the innovation development because apart from combining audio, visuals, and text, videos can also be made in various forms. Audio and visual media with elements of movement and sound can be used as teaching aids in multiple fields of study because video media, besides providing information and entertainment, can also be used as a learning medium (Prahara et al., 2021). This development must involve good planning, appropriate approaches, learning methods, and effective learning media (Widiyasanti & Ayriza, 2018). Animated video learning media that is appropriate and effective can increase learning motivation. The development of earthquake disaster mitigation videos must be done, especially for persons with disabilities. Agree with the previous statement that persons with disabilities are vulnerable to natural disasters, especially when they lose their families, assistive devices and mobile devices, and obstacles to accessing information, facilities, and infrastructure (Indriani & Marlina, 2020).

Based on the results of the problems from previous studies, Klaten Regency is one area with a high level of disaster-proneness, so many disasters occur, including earthquakes. The existence of disasters can encourage educational efforts to reduce the risk of earthquake disasters through educational patterns and implementation of disaster education (Astara & Hafida, 2021). Disaster education can be carried out with learning media, one of which is an animated video on earthquake disaster mitigation. It is necessary to analyze the need to develop earthquake disaster mitigation videos. This study aims to present the needs analysis results for producing an animation video for earthquake disaster mitigation. Animated video analysis for elementary school children with disabilities requires a video animation design that contributes to designing friendly and applicable content in earthquake disaster mitigation. The novelty of this research is the deepening of video content developed in Sipakdedifa.

METHOD

This study used qualitative research methods. The research subjects included 161 students and 121 SLB teachers in Klaten District. SLB students need knowledge about earthquake disaster

mitigation and will understand it more easily if there are learning media such as animated videos. The data collection technique used is a needs analysis questionnaire. The data analysis technique simplifies the data obtained into a form that is easier to understand. The data analysis technique used is an interactive data analysis technique. A needs analysis questionnaire was prepared to determine the percentage of value to complete the needs analysis questionnaire. Questionnaires can be analyzed using interactive analysis by analyzing data in the form of scores obtained from the results of student questionnaires.

RESULTS AND DISCUSSION

Analysis of the needs of the earthquake disaster mitigation animation video is divided into two, namely the needs of students and teachers as respondents in this study. Data collection was carried out by distributing questionnaires directly to respondents who were carried out by researchers, distributing questionnaires throughout SLB in Klaten Regency, with the results of the analysis of the two respondents being explained in Figure 1.

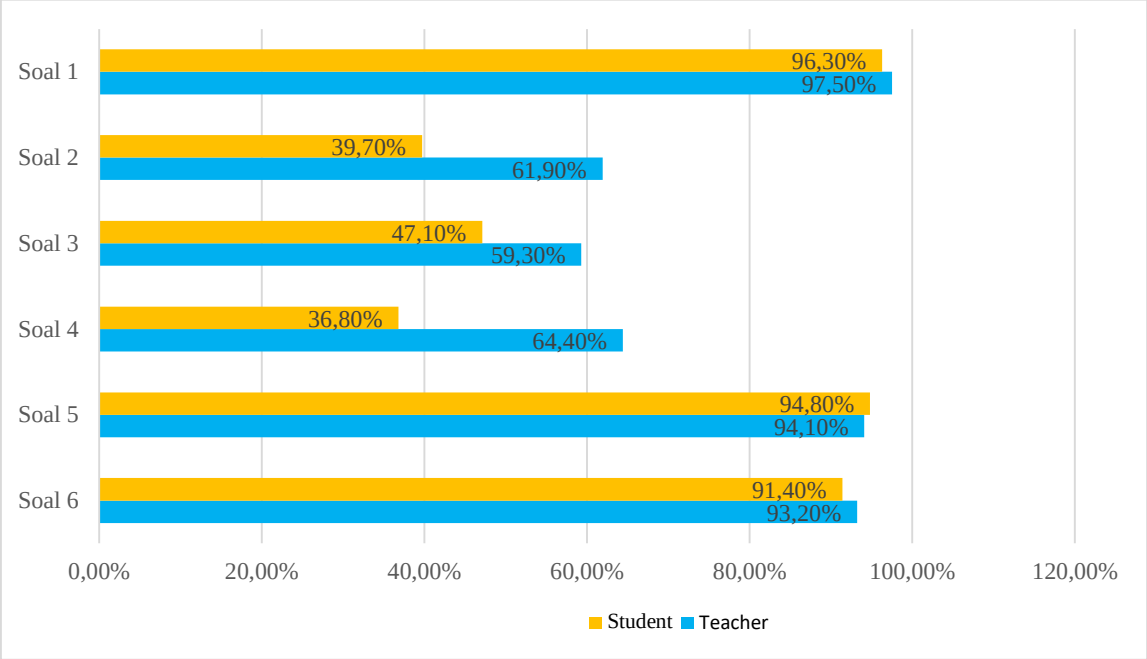

Figure 1. The results of the Student and Teacher Needs Questionnaire in the Material Aspect

The questionnaire results in Figure 1. show that as many as 161 students and 121 SLB teachers in all districts have filled out the needs analysis questionnaire sheet the researchers carried out directly. In Figure 1, 6 questions refer to the assessment of material aspects. Question number 1 stated that 171 student respondents chose to include learning objectives, with a percentage of 96.3%, while 115 teacher respondents chose to have learning objectives, with a percentage of 97.5%. Question number 2 discusses the availability of animated video learning media. Sixty-nine student respondents answered that it was not yet available, with a percentage of 39.7%, while 73 teachers responded that it was not yet available, with 61.9%. Question number 3 discusses the material that has been delivered using video animation. Eighty-two student respondents answered with a percentage of 47.1%, while 70 teacher respondents chose to answer 59.3%.

Furthermore, in question number 4, discussing the presentation of animated video learning media, 110 student respondents answered in detail and clarity with a percentage of 63.2%. In comparison, 76 teacher respondents answered in detail and clarity, with a percentage of 74.4%. In question number 5, discussing the introduction in the video, as many as 165 student respondents answered that it was necessary to be brief, with a percentage of 94.8%. In comparison, 111 teacher respondents answered that it was necessary to be brief, with a percentage of 94.1%. And in question 6, discussing the desired content of animated video media, as many as 159 student respondents

answered animated video material accompanied by examples, with a percentage of 91.4%, while 110 teacher respondents answered the same, namely animated video material accompanied by examples with a percentage of 93.2%.

Based on these results, the development of animated videos on earthquake disaster mitigation materials needs to be developed by researchers because, in all SLBs in Klaten Regency, there are no earthquake disaster mitigation animation video teaching materials as teaching materials for teachers. Even though it has not used animated videos as teaching materials in its application, teachers use other media, such as books, as teaching materials. It is in line with Izza's Statement (2019) stating that it is necessary to develop animated videos as teaching materials to make it easier for students to understand learning material and can increase student motivation and achievement. It is in line with the research conducted by Ponza, Jampel, and Sudarman (2018), that the learning animation videos developed are designed in such a way as to display text, colorful images, audio, and animation in one unit, it can provide a unique attraction for students to learn through the presentation of audio-visual material. It means that developing animated video teaching materials can help teachers convey teaching material with video to motivate students to learn it (Ananda, 2017). In addition, earthquake disaster mitigation material is packaged through an attractive animated video display. Teaching materials that can add insight and knowledge to students more efficiently by displaying images, text, and audio (Agustini & Ngarti, 2020).

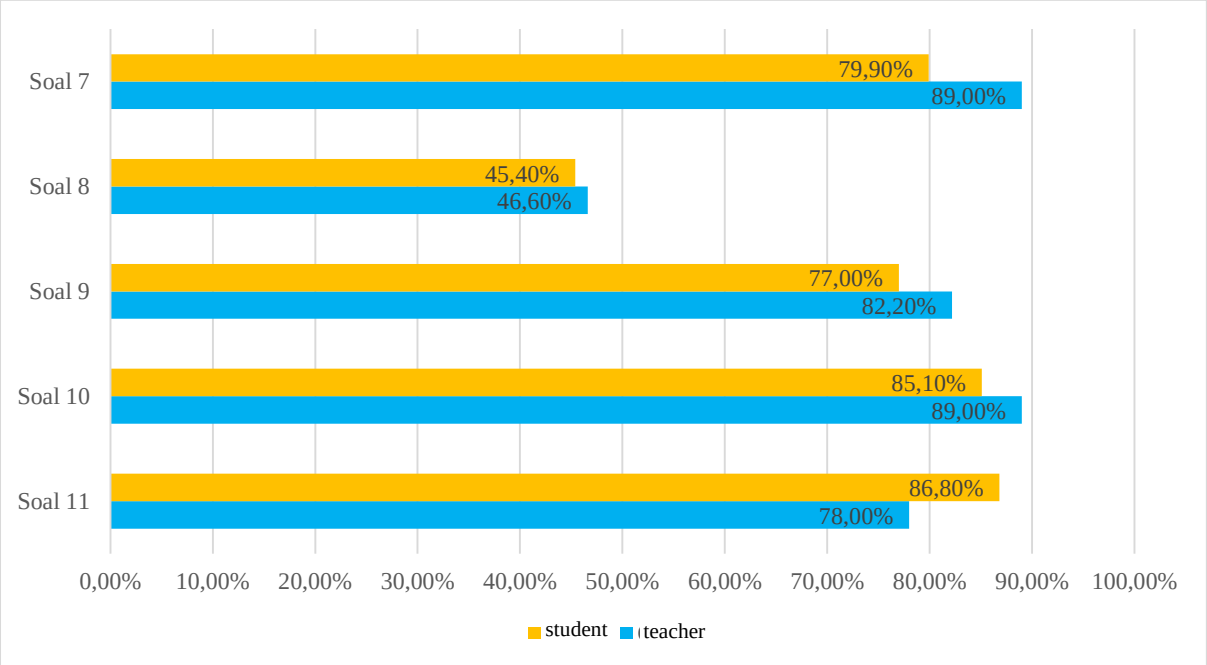

Figure 2. The results of the Questionnaire on Student and Teacher Needs in the Language Aspect

The results of the questionnaire are in Figure 2. The results of the questionnaire for the needs of students and teachers in the linguistic aspect show that 161 students and 121 SLB teachers from all districts filled out the needs analysis questionnaire sheet, which was carried out by the researchers directly. Question number 7 discusses the language used in the animated video. There are 161 student respondents, with a percentage of 79.90% choosing to use sign language, and 118 teacher respondents choosing to need to use sign language, with a percentage of 89%. Question number 8 discusses the criteria for using language style in the material, 161 student respondents chose to use communicative language with a percentage of 45.40%, and 118 teacher respondents chose to use communicative language with a percentage of 46.40%. Question number 9 discusses the use of language in animated video learning media. One hundred sixty-one student respondents choose to use language that is easy to understand, with a percentage of 77%, and 118 teacher respondents

choose to use language that is easy to understand, with a percentage of 82.20%. Question number 10 discusses the presentation of explanations of the contents of the material in the video, 161 student respondents chose audio-visual accompanied by text with a percentage of 85.1%, and 118 teacher respondents chose audio-visual accompanied by text, with a percentage of 89%. Question number 11 discusses the display of earthquake animation videos. 161 student respondents are choosing a balance between material and simulation with a percentage of 86.80%, and 118 teacher respondents choosing a balance between material and simulation with a percentage of 78%.

Based on these results, the development of earthquake disaster mitigation videos needs to be developed by researchers because animated videos can help the learning process of students and teachers through audio, visual, and text media to achieve learning success. The success of the learning process in teaching and learning activities is influenced by several factors, including teachers, students, curriculum, learning environment, and learning resources (Mutia et al., 2018). Students with disabilities need sign language in animated videos because it is more understandable for students with hearing impairments. It is in line with Mursita (2015) that deaf people in communicating find it challenging to convey and understand messages, so they need a language that suits their needs, namely by using sign language. The criteria for using language style in animated videos use communicative language so that students and teachers can understand quickly and clearly. It is in line with (Nisa & Sujarwo, 2020). Communication is essential when teaching, so communication skills are necessary for children and parents. Animated videos contain balanced teaching materials accompanied by simulations with examples. Each component is interconnected and influences each other in each teaching and learning process, which includes learning objectives, learning materials, teachers/teaching, students, methods, media/educational tools, learning environment situations, and learning evaluations (Farista & M, 2018).

Suitable teaching materials are teaching materials that contain all aspects of learning. Teaching materials are essential in learning (Prawindia et al., 2016). With teaching materials that have a function in learning, teachers can provide good material to students to improve learning outcomes.

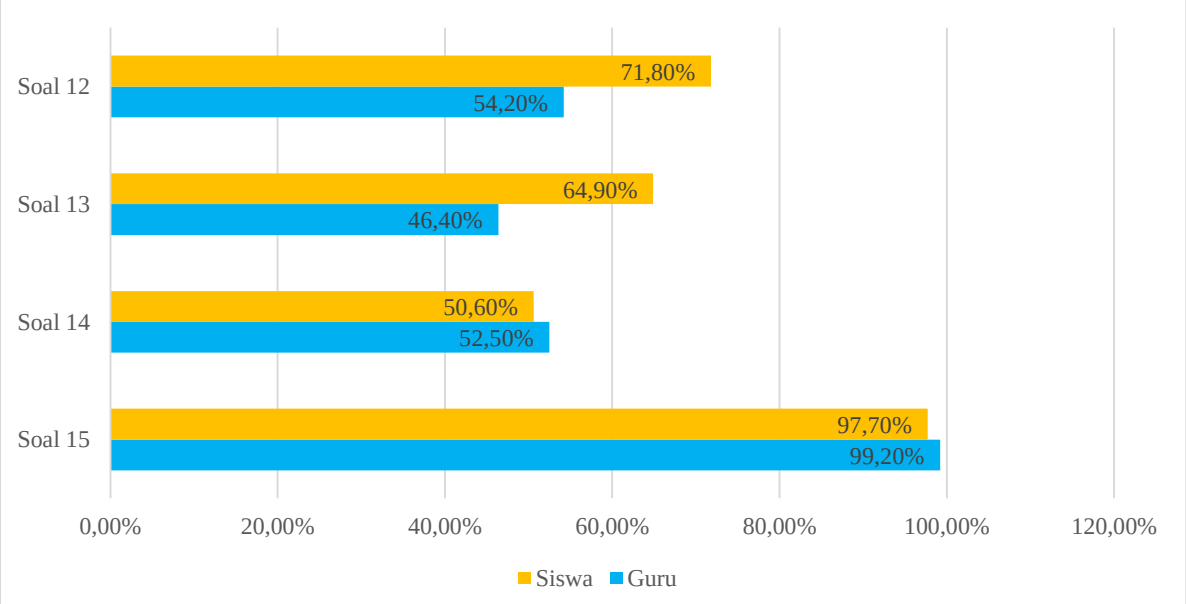

Figure 3. Results of Student and Teacher Needs Questionnaire in the Multimedia Aspect

The results of the questionnaire are in Figure 3. The results of the questionnaire on the needs of students and teachers in the multimedia aspect show that as many as 161 students and 121 SLB teachers from all districts filled out the needs analysis questionnaire sheet, which was carried out by the researchers directly. Question number 12 discusses the theme of music; 161 student respondents chose freely, with a percentage of 71.80, and 118 teacher respondents chose freely, with a percentage of 54.20%. Question number 13 discusses the color of the video display; 161 student respondents choose complimentary colors with a percentage of 64.90%, and 118 teacher respondents choose

complimentary colors with a percentage of 46.40%. Question number 14 discusses the duration of the video, 161 student respondents chose a duration of 10-15 minutes with a percentage of 50.60%, and 118 teacher respondents chose 10-15 minutes with a percentage of 52.50%. Question number 15 states whether the development of an earthquake natural disaster mitigation video needs to be developed. One hundred sixty-one student respondents stated it is necessary, with a percentage of 97.70%, and 118 teacher respondents stated it is necessary, with a percentage of 99.20%. Based on these results, the development of animated videos on earthquake disaster mitigation materials needs to be developed by researchers because, in all SLBs in Klaten Regency, there are no earthquake disaster mitigation animation video teaching materials as teaching materials for teachers. Even though its application has not used animated videos as teaching materials, teachers use other media, such as books, as teaching materials.

Based on these results, it is necessary to develop earthquake animation videos because, in practice, they have not used animated videos as teaching materials. Still, teachers use other media, such as books, as teaching materials. The audio for the music theme in the video must match what is visualized to make it more interesting. It is in line with that audio-visual learning can be more interactive and more likely to occur two-way traffic in the learning process. The video's duration and the colors chosen according to the needs of the video affect students' comprehension abilities. It is in line with (Assyifa et al., 2020) that introducing colors to children is vital to improving children's cognitive abilities.

CONCLUSION

Based on the study's results, it can be concluded that in learning earthquake disaster mitigation, teaching materials are needed in the form of an animated earthquake disaster mitigation video for elementary school disabilities. With exciting developments and following the needs of students in terms of material, language, presentation, and multimedia, the teacher's delivery of earthquake disaster mitigation material can be easily understood by students. This research serves as a reference for further research on developing earthquake disaster mitigation videos for elementary school disabilities.

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