

Strengthening East Java Contextual Disaster Literacy in Social Science Learning



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ABSTRACT: The aim of this research is to develop East Java contextual disaster mitigation teaching materials in social science subjects and test the differences between initial knowledge and learning outcomes after implementing the teaching materials in three schools with different regional characteristics. This research uses the Borg and Gall (2007) development model which includes nine stages. The research subjects were 64 students of SMPN 1 Sidoarjo (coastal area character), 60 students of SMP Plus Al Fatimah Bojonegoro (solo river fluvial area character), 62 students of Maospati 3 SMPN (mountain area character). Data was collected through interviews, questionnaires, and pretest-posttest which was then analyzed using descriptive and inferential statistics (Anacova). The results of this research are: 1). East Java contextual disaster mitigation teaching materials were assessed as very appropriate by expert validators with slight revisions; 2). Students gave very positive responses and support to the application of teaching materials; 3) there are differences or improvements in initial abilities (pretest) with learning outcomes (posttest) in the three schools; 4) There is a significant difference in learning outcomes between SMPN 1 Sidoarjo and SMPN 3 Maospati. The two junior high schools in this area have different risks from natural disasters, so students' understanding of disasters is influenced by their respective contextual environments.

KEYWORDS: Disaster literacy, contextual, social science

I. INTRODUCTION

The island of Java, especially East Java, is one of the regions in Indonesia that is very vulnerable to various types of natural disasters, such as earthquakes, volcanic eruptions, floods and landslides. Therefore, it is important to carry out disaster mitigation studies in this region in an effort to reduce the negative impacts of these disasters. According to Windiani (2021), one of the important aspects of disaster mitigation learning in East Java is the development of learning in schools; Various educational and training innovations have been held to increase students' understanding of the disaster risks they face (Triastari et al., 2021). This learning innovation includes knowledge about emergency response measures, evacuation planning, and safe practices in dealing with natural disasters (Maryanto et al., 2023). One innovation that needs to be developed in disaster mitigation learning is disaster literacy.

Currently, the level of disaster literacy in East Java is still relatively low (Hariyono & Rosdiana, 2015). Many people do not yet have an adequate understanding of the disaster risks they face, the actions they must take in emergency situations, and how to protect themselves and their families (Sejati et al., 2019). This makes them more vulnerable to the negative impacts of natural disasters. Schools in East Java have a key role in increasing disaster literacy. The curriculum has been enriched with disaster-related material, and disaster education programs have been implemented. Students and teachers are given training on actions to take in disaster situations, as well as how to identify early warning signs.

However, based on preliminary data analysis in several schools in East Java, the disaster material presented in learning is not yet contextual; Disaster material still refers to teaching materials provided by the Ministry of Education and Culture (Oktaria, Windah, et al., 2023). This condition results in the potential disaster areas in East Java not being presented and applied in school learning. An introduction to disaster mitigation that is contextual to one's own region must be done through education, especially in schools. It would be even better if it was included in the education curriculum at primary to upper secondary levels (M. E. Atmojo, 2020).

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The importance of contextual disaster mitigation learning in East Java is to understand the potential for disasters in East Java itself and utilize local knowledge and cultural wisdom that has been formed over the years. According to Sejati et al., (2019), local communities often have a deep understanding of natural disasters that often occur in their area; Disaster mitigation programs must combine this traditional knowledge with scientific approaches to create effective strategies (S. E. Atmojo et al., 2018).

Contextuality in disaster mitigation also means understanding the existing infrastructure and resources in East Java. In dealing with floods, for example, an adequate drainage system and an effective early warning system are needed that are appropriate to the geographical and social conditions of the local community. In addition, the availability of resources such as fire extinguishers, rescue boats, and emergency food must also be considered in mitigation planning (Amri et al., 2017). Social Sciences have a very important role in contextual disaster mitigation learning (Andriana et al., 2017). IPS helps communities and stakeholders understand the social, cultural, economic, and political contexts that influence how they face and respond to natural disasters.

Social science helps in analyzing disaster risks specific to East Java by considering social factors, such as population distribution, settlement patterns, economic level, and community behavior (Fajar et al., 2022); assists in identifying the most vulnerable areas and designing mitigation strategies that are appropriate to local social conditions (Logayah et al., 2022). In addition, IPS also helps understand people's perceptions regarding disaster risk, which can influence their preparedness and response (Şentürk, 2023). Social Sciences plays a role in designing curriculum and learning materials that integrate knowledge about disaster mitigation. This includes teaching the public about actions to take in disaster situations, the role of social institutions in emergency response, and how to interact with the social environment in overcoming disasters. Social campaigns can also utilize IPS to convey disaster mitigation messages in a way that is easy to understand and socially relevant.

To support disaster literacy skills, teaching materials regarding detailed disaster preparedness knowledge are needed by paying attention to the contextual disasters of each region because the conditions and needs of each region are different. According to Buamona et al., (2023), Social Sciences consider it necessary that teaching materials about disaster preparedness have important value and are prepared according to the type of disaster in the region and do not conflict with local culture; For this reason, it is urgent to develop disaster-based social studies learning tools to strengthen disaster mitigation literacy in East Java (Aroyandini et al., 2023). Through social studies learning about disasters, it is hoped that students will become aware of the possibilities of disasters and how to adapt to them (Matunhay, 2022).

This research aims to innovate disaster mitigation learning applied to junior high schools in East Java. Innovation in the form of developing teaching materials for Social Sciences subjects that are integrated with contextual disaster mitigation literacy in East Java. Through the development of disaster literacy learning tools, it is hoped that students' knowledge regarding understanding disasters in East Java can increase.

II. METHOD

This research is research and development, compiling social science (IPS) subject materials that are integrated with contextual disaster mitigation literacy in East Java. The development model uses the Borg and Gall development. The research procedure that will be carried out in this study includes nine steps, namely: 1). Preliminary studies; 2). Planning Research; 3). Design Development; 4) Preliminary Field Testing; 5). Revision of Limited Field Test Results; 6). Main Field Test; 7) Revision of Wider Field Test Results; 8). Operational Field Testing; 9). Final Revision. To collect data, this research used the following instruments: 1). Learning devices; 2). Learning device validation sheet; 3). Student response questionnaire; 4). Learning outcomes test.

The subjects of this research were SMPN 1 Sidoarjo (64 students), SMP Plus Al Fatimah Bojonegoro (60 students), and SMPN 3 Maospati Madiun Regency (62 students). The three schools were chosen to represent the regional characteristics of East Java Province. The different characteristics of these regions include Sidoarjo (coast), Bojonegoro (fluvial/Solo river valley), and Maospati (mountains).

To obtain the desired data, researchers used observation, tests, interviews, and questionnaires. The data obtained is in the form of qualitative and quantitative data, the qualitative data is explained and reviewed clearly while the quantitative data is analyzed as follows:

A. *Analysis of the feasibility of learning devices*

The learning tools developed are reviewed using a review sheet by writing down whether or not each domain is expected in each tool and assessed with a score of 1 to 4 with categories: 1 = poor, 2 = sufficient, 3 = good, 4 = very good. Score interpretation criteria: 1). 81%-100% : Very decent; 2). 61%-80% : Eligible; 3)/ 41%-60% : Quite decent; 4). 21%-40%: Not feasible; 5). 0%-20%: Very less, (Riduan, 2009:21).

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Based on the results of the study and suggestions given by the reviewer, it is known that the device prepared is feasible or still needs improvement before being used/tested. Learning tools can be said to be suitable for use in learning if they get an average score.

B. Analysis of Student Responses

After students carried out the learning, they were given a questionnaire to find out their response to the East Java contextual disaster mitigation teaching materials. The responses that have been obtained are then analyzed using percentage calculations. Based on students' answers, they are categorized into positive, neutral, or negative responses

C. Analysis of Student Learning Outcomes

Analysis of learning outcomes was carried out on learning outcomes in three schools (SMPN 1 Sidoarjo, SMP Plus Al Fatimah Bojonegoro, and SMPN 3 Maospati Madiun Regency). Learning outcomes are obtained through test instruments (pretest and posttest) by providing 25 multiple-choice questions. Pretest data is initial knowledge that will be used as a covariate variable. Post-test data is the final result after implementing disaster mitigation learning which will be used as a dependent variable. Treatment by applying East Java contextual disaster mitigation literacy-based learning in social science subjects will be used as the independent variable. The learning outcomes data analysis technique uses one-way Anocava inferential statistics.

III. RESEARCH RESULT

The results of each stage of development by Borg and Gall (2007) which have been carried out in research on the development of social studies learning tools based on contextual disaster mitigation in East Java at SMPN 1 Sidoarjo, SMP Plus Al Fatimah Bojonegoro, and SMPN 3 Maospati Madiun Regency can be explained as follows.

A. Preliminary Studies

This stage is the initial activity carried out by the researcher, which includes needs analysis. A needs analysis is carried out to find out the solutions needed to overcome existing problems. The output or result of this stage is an analysis based on the results of an initial survey conducted with interviews with Social Sciences subject teachers and interviews with several class VII IPS students in the three schools, regarding Social Sciences lessons and analysis of the learning tools used by students in Social Sciences learning.

The results of the analysis based on an initial survey of 186 students at SMPN 1 Sidoarjo, SMP Plus Al Fatimah Bojonegoro, and SMPN 3 Maospati, showed that 165 or 89% of students used teaching materials in the form of student worksheets, 20 or 11% of students use textbooks and student worksheets as teaching materials. Most students think that student worksheets are teaching materials that are difficult to understand, the material is too short if you have to use it to do a lot of questions, because the material is short and concise even though the questions are very practical and helpful in learning, apart from that, worksheets students are considered cheap teaching materials. It can also be seen that as many as 170 or 92% of students do not read the material before the Social Sciences lesson the next day, this shows the lack of interest of students in reading teaching materials because they feel that the current Social Sciences teaching materials are less interesting and less varied (less there is a picture). Most students prefer to search for Social Sciences information via the internet because the internet also includes pictures that support the information so that students can better imagine the existing material.

B. Planning Research

The research objective of this research is to develop new teaching materials containing contextual disaster mitigation literacy in East Java that are considered appropriate for social science subjects. Class VII social science learning themes will be integrated with East Java contextual disaster mitigation material.

This research uses an experimental class, the determination is taken randomly. Before the questions are used as a test instrument, they have first been tested on groups other than research subjects. 25 test questions in multiple-choice form that meet the validity and reliability of the questions will be used for the pretest and posttest.

C. Design Development

The design of the East Java contextual disaster mitigation literacy learning tool that was developed is teaching material printed on A4 paper with sizes of 8.27" and 11.69". All contents of teaching materials are printed in color, this is to clarify the images and graphics included in the teaching materials. The characteristics of the teaching materials developed are:

- 1) in accordance with existing content standards,
- 2) contextual by paying attention to the environmental conditions around where the students are,
- 3) inclusion of a description of the material

Based on several things above, the design of teaching materials that will be prepared is as follows:

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- 1) interesting sub-chapter titles and illustrations,
- 2) contains competency standards and basic competencies that students must achieve,
- 3) present a concept map that will provide an initial overview of the material to be studied,
- 4) contains contextual problems that will lead to the material,
- 5) present the material (concepts) clearly and include illustrations or depictions to make it easier for students to receive the material,
- 6) shown a web address so that students can explore further about related material,
- 7) contains practice questions to measure students' level of understanding of the material,
- 8) include project assignments as student group activities,
- 9) contains a summary of the material.

D. Limited Field Test

This step is a limited product test. At this stage, initial field tests are carried out on the design of limited teaching materials, both on the substance of the design and the parties involved. Teaching materials were shown to several students and also to material experts, teaching materials experts, media, and language experts.

E. Revision of Limited Field Test Results

Initial product improvements will be made after limited field trials. At this initial product refinement stage, more is done using a qualitative approach. The evaluation carried out is more of an evaluation of the process so that the improvements made are internal improvements.

The following are suggestions for improvements from each expert:

1) input from material experts and media experts:

- Please complete the images in teaching materials with image identification or image source,
- include pictures that actually exist in the area around the student's location or the school environment,
- more image illustrations,
- the material is given more examples that are better understood by students,
- the writing is checked again because there are still many errors,

2) input from linguistic experts:

- Some of the words used are too difficult to understand, so please make them easier.
- Also clarify the use of punctuation, so that it is better understood.

F. Field Test

The trial was carried out three times during learning in the experimental class, the teacher's activities in using the teaching materials developed and observed by the researcher. The following is a recapitulation of the results of teacher observations during the three lessons. At the first meeting, after they were given a textbook, the students were taken by the teacher to carry out the learning process with material on understanding and types of disasters in East Java. Teachers use the lecture method without using other media except for teaching materials that have been developed. The second meeting was held in class, for this meeting the teacher presented material on the potential distribution and occurrence of natural disasters in East Java. In the third meeting, through teaching materials, the teacher presented disaster mitigation material consisting of actions taken pre-disaster, during a disaster, and post-disaster. This knowledge is intended so that students understand how to carry out mitigation in disaster-prone areas like their area.

After trial learning for three meetings using the teaching materials that had been developed, the researcher conducted a posttest to determine the level of students' ability to understand the content of the teaching materials that were developed. To determine the level of influence between initial knowledge (pretest) on learning outcomes (posttest) in the three schools, a 1-way ANOVA test was carried out. The following is Table 1 of the results of the description of student learning outcomes data after carrying out learning using East Java contextual disaster mitigation teaching materials in three schools.

Table 1. Descriptive Statistics

Dependent Variable: Postes

Aplication_of_Teching_material_in_3_School	Mean	Std. Deviation	N
SMPN 1 Sidoarjo	75,2344	9,53480	64
SMP Plus Al Fatimah Bojonegoro	78,3167	9,13272	60
SMPN 1 Maospati	79,4355	8,06250	62
Total	77,6290	9,06773	186

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Based on Table 1, SMPN 1 Sidoarjo with a subject of 64 students has an average learning outcome score of 75, SMPN Plus Al-Fatimah Bojonegoro with a subject of 60 students has an average learning outcome score of 78, SMPN 3 Maospati with a subject of 62 students has a score of the average learning outcome is 79.

Before carrying out Anacova statistical testing, data homogeneity and normality testing were first carried out. From data processing, a homogeneity test was obtained with a P-value of 0.167 (P-value>0.05) which indicates that the assumption of homogeneity of covariance is met. Data processing from the normality test of learning outcomes data with a P-value of 0.138 (P-value>0.05) which indicates that the assumption of data normality is met. After the homogeneity and normality tests of the data are fulfilled, the hypothesis test continues. Table 2 below is the result of hypothesis testing with Anacova.

Table 2. Tests of Between-Subjects Effects

Dependent Variable: Postes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1016,607 ^a	3	338,869	4,345	,006
Intercept	61186,538	1	61186,538	784,509	,000
Pretes	418,914	1	418,914	5,371	,022
Aplication_of_Teching_m aterial_in_3_School	630,609	2	315,304	4,043	,019
Error	14194,796	182	77,993		
Total	1136097,000	186			
Corrected Total	15211,403	185			

a. R Squared = ,067 (Adjusted R Squared = ,051)

Table 2 shows that between initial ability (pretest) and the dependent variable learning outcomes, the significance value is 0.22, which means the sig. < 0.05. This means that there is a difference in initial knowledge (pretest) with learning outcomes (posttest). Meanwhile, East Java contextual disaster mitigation learning implemented at SMPN 1 Sidoarjo, SMPN Plus Plus Al Fatimah, and SMPN 1 Maospati schools with the dependent variable learning outcomes has a significance value of 0.19, which means a sig. > 0.05. This means that there are differences in schools that apply East Java contextual disaster mitigation teaching materials with learning outcomes. Based on the average value, the biggest difference is between SMPN 1 Sidoarjo and SMPN 3 Maospati.

G. Revised Wider Field Test Results

This stage is the second improvement stage after carrying out field tests that are more extensive than the first field test. Refining teaching materials from the results of this wider field test will further strengthen the teaching materials being developed. Product improvements and improvements are internal and are also based on student response questionnaires that have been given. Product improvements based on the results of this wider field test are only slight because based on the reasons stated by students in the student response questionnaire, the teaching materials that have been developed are quite good. There is no criticism of teaching materials, only input on printed pictures that are not clear and their responses regarding disaster mitigation. The following are the results of responses from students who have implemented social studies learning based on contextual disaster mitigation in East Java.

Table 3. Student responses after using East Java contextual disaster mitigation teaching materials

Response Statement	Positive response (%)	Neutral (%)	Negative response (%)
East Java contextual disaster mitigation teaching materials are very interesting	80	25	0
East Java contextual disaster mitigation teaching materials are a new experience	85	15	0
East Java contextual disaster mitigation teaching materials help improve the quality of learning	85	10	0
The material in the East Java contextual disaster mitigation teaching materials is displayed clearly	90	10	0
Learning using East Java contextual disaster mitigation teaching materials is fun	80	20	0

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East Java contextual disaster mitigation teaching materials can increase understanding of disaster material	85	15	0
The use of East Java contextual disaster mitigation teaching materials is easy to use	90	10	0
The use of East Java contextual disaster mitigation teaching materials makes it easier to construct knowledge	85	15	0
The use of East Java contextual disaster mitigation teaching materials helps remember the material studied	80	20	0
East Java contextual disaster mitigation teaching materials encourage further learning	85	15	0

The results of student responses in Table 3 show that the enthusiasm for implementing contextual disaster mitigation teaching materials in East Java mostly received positive responses. Not a single student responded negatively to the learning. More than 80% of them viewed positively the application of contextual disaster mitigation teaching materials in East Java, because: 1). very interesting (80%); 2). provide new experiences (85%); 3). improve learning quality (85%); 4). clear material display (90%); 5). Fun (90%); 6). Increase understanding of disaster material (85%); 7). Easy to use (90%); 8). constructing knowledge (85%); 9). Remembering the material studied (80%); 10). encourage further learning (85%).

H. Operational Field Testing

At this stage, validation of Geography teaching materials begins to be carried out based on the assessment of teaching materials experts, material experts, and language experts. This validation was carried out after East Java contextual disaster mitigation teaching materials were distributed to class VII students from SMPN 1 Sidoarjo, SMP Plus Al Fatimah Bojonegara, and SMPN 3 Maospati, Madiun.

Validation was carried out after the teaching materials were distributed to class VII students, which is the experimental class. The total average number of content feasibility components is 92% or based on score interpretation criteria (based on a Likert scale) by Ridwan, the content feasibility is included in the very good/very feasible criteria. Meanwhile, the average total presentation feasibility component is 80.56%, and based on the score interpretation criteria based on the Likert scale by Ridwan, the feasibility of the content is included in the very good/very feasible criteria as well. The total average component of linguistic appropriateness is 92%, or based on score interpretation criteria (based on a Likert scale) by Ridwan, the appropriateness of the content falls into the very good/very appropriate criteria. From the results of the validation of teaching materials by material experts, teaching materials experts, and language experts, it can be concluded that the teaching materials are considered suitable in terms of content components, presentation components, and linguistic components. The teaching materials developed are suitable for use in learning.

I. Final Revision

This stage is the final refinement stage of the model developed based on the results of expert validation and product trials in the field to produce the expected final product. At this stage, product improvements only involve technical improvements in printing, there are no internal changes to the shape and material of the product being developed.

IV. DISCUSSION

A. Feasibility of Teaching Materials

The development of teaching materials is a form of developing learning strategies that are in accordance with certain principles adapted from learning theories (Syahid & Hidayat, 2004); The development of teaching materials is not only based on the interests of the developer but is an alternative to solving learning problems (Marwiah & Pahar, 2021). The implied aim of developing this teaching material is a change in students' behavior toward their environment, related to students' sense of environmental concern (Mardiani et al., 2018).

Before the developed teaching materials can be applied in learning, East Java contextual disaster mitigation teaching materials in social science subjects must be tested for suitability by material, media, and language experts. East Java contextual disaster mitigation teaching materials that have been tested by experts are very important to be applied in social studies learning, especially for students who live in East Java. According to (Akman. et al., 2014), contextual teaching materials help individuals and communities to understand specific disaster risks in their area; This includes identifying natural threats and social

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risks that may affect them, such as earthquakes, floods, droughts or other hazards unique to their region (Purnomo et al., 2022). Context-relevant teaching materials enable communities to design appropriate disaster mitigation plans. This includes understanding how to build earthquake-resistant structures, overcome drainage problems to reduce flooding or develop more drought-resistant agricultural strategies (Bugdayci & Cetinkaya, 2022).

Contextual disaster mitigation teaching materials can help increase awareness of disaster risks (Oktaria, Putra, et al., 2023). By better understanding risks, people tend to be better prepared to face them and take action to protect themselves and their communities (Syarif, 2023). Teaching materials regarding disaster mitigation help increase public awareness about potential disaster risks in their environment (Syarif, 2023). This helps individuals and communities to better understand the types of disasters that may occur and how to identify the early signs. Disaster mitigation approaches must be adapted to the local context and the specific risks faced by a region. Therefore, contextual teaching materials are very important in providing relevant and effective guidance to individuals and communities in disaster mitigation efforts.

Disaster mitigation teaching materials in social science learning emphasize the importance of community involvement in disaster risk reduction efforts (Purnomo et al., 2022). Social sciences help students understand the role of society in planning, implementing, and monitoring mitigation strategies (Fajar et al., 2022); This teaches the values of active participation, cooperation, and social responsibility which are the foundations for building communities that are resilient to disasters (Manurung et al., 2020). Disaster mitigation teaching materials in social science learning are not only about knowledge but also about action. Students are taught to identify disaster risks in their communities and plan concrete mitigation actions. It encourages the development of leadership, collaboration, and advocacy skills necessary to create communities that are more resilient to disasters. Thus, this teaching material contributes to the formation of citizens who are responsible and empathetic to the welfare of society.

B. Student Response

The results of the limited trial of students in the experimental class were obtained by students' responses to the teaching materials by distributing student response questionnaires after the teaching and learning process was carried out for three meetings. The student results show that the majority of students' responses were positive regarding the application of East Java contextual disaster mitigation teaching materials in Social Sciences learning.

Based on the response questionnaire, students assess that this teaching material is suitable to be used as teaching material for them, and also from the responses it is known that they are interested in the teaching material that has been developed. Students' interest in the product being developed influences the responsiveness of their behavior in the environment in accordance with the first principle of connectionism theory, namely learning an activity to form an association (connection) between five sense impressions and the tendency to act according to what attracts their attention.

Contextual disaster mitigation teaching materials are a learning approach that aims to make learning disaster material more relevant and meaningful for students (Abdullah et al., 2022). In this approach, disaster teaching materials are prepared and presented by linking them to real-world situations or students' daily contexts (Welerubun et al., 2022). Student responses to the suitability of contextual teaching materials are very important in evaluating the success of this learning method.

First, students tend to be more interested and motivated when teaching materials are presented in a context that is relevant to their lives. According to Khoiron et al., (2021), teaching materials that feel real and useful in their daily lives make students more enthusiastic about learning; They see that what they learn has direct application in their lives, which can increase their interest in the learning process (Nur & Wisnu Wijaya, 2021).

secondly, contextual teaching materials can help students understand difficult concepts better. According to Muzani et al., (2020), by connecting lesson material with real situations, students can see how these concepts are used in everyday life; This allows them to understand the concept in more depth because they can see its relevance in a wider context (Louis-Jean & Cenat, 2020).

Third, contextual teaching materials can also increase student involvement in learning. In situations where students feel personally involved with the lesson material, they tend to be more active in the learning process (Neftyan et al., 2018). They are more likely to participate in class discussions, ask questions, and seek better understanding.

Fourth, contextual teaching materials can promote problem-solving and critical thinking. Students are invited to think creatively and connect the concepts they learn with real-world situations (Nasrun, 2014). This allows them to develop better problem-solving abilities and hone their critical thinking skills (Tari & Rosana, 2019).

Fifth, students' positive responses to the suitability of contextual teaching materials can improve their learning outcomes. When students feel involved, motivated, and can understand concepts better, they tend to achieve higher achievement in the

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lesson (Tamam Syaifuddin et al., 2021). Therefore, contextual teaching materials can be an effective strategy for improving the quality of education (Purba et al., 2023).

In conclusion, students' responses to the suitability of contextual teaching materials tend to be positive. This learning method can increase student interest, understanding, involvement, problem-solving abilities, and learning outcomes. Therefore, this approach should be considered by educators as a way to improve the quality of learning in the classroom.

C. Learning outcomes

1). Difference between Pretest (initial knowledge) and Posttest (learning outcomes)

One of the key elements in disaster education is the use of contextual teaching materials. Contextual teaching materials are designed to connect concepts and theories with real situations in everyday life, including disasters (Hoffmann & Muttarak, 2017). Learning outcomes experienced significant changes or differences between pre-test scores (initial abilities) and post-test scores seen from the average scores in the three schools that implemented East Java contextual disaster mitigation teaching materials.

Through the use of contextual teaching materials, students tend to be more interested and motivated when teaching materials are presented in a context that is relevant to their lives. Contextual teaching materials can also increase students' learning motivation (Sumarmi et al., 2020). Increasing understanding of disasters will make students realize that their knowledge of disaster mitigation can contribute directly to the safety and well-being of their community, and they are more likely to engage with the material (Rany et al., 2020). This can change their perception of learning from something that is merely academic to something that has a real impact on everyday life.

The use of contextual disaster mitigation teaching materials has been proven to have a positive influence on student learning outcomes. Findings suggest (Hoffmann & Blecha, 2020), that by focusing on practical applications, students can develop concrete skills that they can use in emergency situations; Case studies and simulations that actively involve students also help strengthen their understanding, so that they are better prepared to face disasters that may occur in their environment (Fauziah & Nurita, 2019).

The use of contextual disaster mitigation teaching materials has a significant influence on improving student learning outcomes. This is in accordance with the findings of (Hidayat et al., 2023), which state that by bringing disaster mitigation concepts closer to real-world situations, students can understand the importance of this effort in protecting themselves and their communities; In addition, students' motivation to learn also increases because they realize the positive impact they can bring through their knowledge (How et al., 2020). Therefore, contextual disaster mitigation teaching materials should be an important part of the educational curriculum to prepare future generations to face the threat of disasters.

2). Differences in learning outcomes from three schools that apply disaster mitigation teaching materials

Learning outcomes experienced significant differences between the three schools that implemented East Java contextual disaster mitigation teaching materials. The most significant difference in learning outcomes is found at SMPN 1 Sidoarjo (characterized by coastal areas) and SMPN 3 Maospati (characterized by mountainous areas), where SMPN 3 Maospati students have better disaster mitigation learning outcomes when compared to disaster mitigation learning outcomes among SMPN 1 Sidoarjo students.

Natural disasters are a threat that can threaten human lives and property in various parts of the world. Disaster awareness is very important, especially for students who live in coastal areas (SMPN 1 Sidoarjo) and mountainous areas (SMPN 3 Maospati), because these two areas have different risks from natural disasters. As stated by (Ho et al., 2008), awareness and knowledge of disaster mitigation can vary depending on the environmental situation in which one lives.

Students who live in coastal areas tend to be more aware of the risk of floods and tsunamis, so their lives close to the sea make them more vulnerable to the threat of high waves (Wignyo & Hidehiko, 2012). Therefore, schools in coastal areas often involve students in safety training, evacuation planning, and creating earthquake-resistant building designs (Nawang Sari et al., 2021). This awareness is an important basis for protecting themselves and their communities when a disaster occurs.

On the other hand, students living in mountainous areas have different risks related to landslides, floods, and soil erosion (Muzani et al., 2020); The altitude of this area does not always prevent them from disasters, especially during heavy rains or loss of soil (Maquaire et al., 2009). Therefore, education about recognizing early signs of disaster and evacuation planning is very important for students in mountainous areas. Their awareness of potential risks can help reduce the negative impacts of natural disasters.

The importance of disaster awareness is not only limited to theoretical knowledge but also involves real attitudes and actions (Nur Indriasari et al., 2018). Students in coastal and mountainous areas must be involved in disaster simulations, evacuation drills, and the formation of school emergency response teams (Shapira et al., 2018). Through active participation in these

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activities, they can develop a deeper understanding of disaster risks and how to deal with them (Xu et al., 2018). Students' disaster awareness in coastal areas and mountainous areas has a key role in minimizing losses due to natural disasters (Susmayadi et al., 2014). Through proper education and active participation in disaster prevention and mitigation efforts, students can become agents of change in their communities. In this way, they can help create a safer and more resilient environment against disasters and serve as an example to future generations about the importance of disaster awareness.

V. CONCLUSIONS

Based on the development research that has been carried out and the results of the discussions that have been explained, it can be concluded as follows: 1). The results of validation by material, media, and language experts on the East Java contextual disaster mitigation teaching materials developed are included in the very good/decent category. Only a few improvements have been made by experts so that the teaching materials are suitable for use in social science learning; 2). Student responses to the use of East Java contextual disaster mitigation teaching materials are very positive. The use of these teaching materials can attract interest, increase understanding, be fun, and easy to use, provide new experiences, improve the quality of learning, encourage further learning, construct new knowledge, and help remember the material studied; 3). There are significant differences and improvements in initial knowledge (pretest) and learning outcomes (posttest) in the three schools that apply East Java contextual disaster mitigation teaching materials in social science subjects. Disaster material that is appropriate to students' learning environment, helps them remember, understand, and analyze potential disasters, especially those that occurred in East Jawa; 4). There are differences in learning outcomes in three schools that apply East Java contextual disaster mitigation teaching materials. The biggest difference occurs at SMPN 1 Sidoarjo (characterized by coastal areas) and SMPN 3 Maospati (characterized by mountainous areas). Each region has a different character, so the potential for disaster is also different so that students optimally understand disaster material which also differs according to environmental conditions.

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