



The development of educational comics on disaster mitigation based on local wisdom for social studies classes in junior high school

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ABSTRACT

Social Studies instruction at the junior high school level still tends to rely heavily on textbooks. As a result, educators often present topics like disaster mitigation in a theoretical manner, failing to connect them to students' real-life experiences. This situation has caused students' interest in learning about and understanding disaster mitigation remaining relatively low, particularly in disaster-prone areas, such as Central Sulawesi. Therefore, this study aims to develop educational materials in the form of educational comics on disaster mitigation based on the local wisdom of Central Sulawesi, as well as to assess their suitability and practicality for use in social studies education. The research and development (R&D) method was adopted, based on the ADDIE model, which comprises the analysis, design, development, implementation, and evaluation phases. Data were collected using validation sheets completed by experts and student response questionnaires based on a Likert scale. Three experts conducted the validation, covering content, media, and language. The test subjects were 27 Year 8 students at SMPN 3 Palu. The expert validation findings indicated a feasibility score of 95%, which falls into the "highly feasible" category after revisions were made based on the validators' suggestions. Meanwhile, the practicality test yielded a score of 1,831 out of a maximum of 2,160, representing 84.77%, falling into the "moderately feasible" category. The findings indicate that using educational comics as a learning medium can enhance students' engagement and improve their understanding of disaster mitigation material.

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INTRODUCTION

Indonesia is highly vulnerable to natural disasters due to its location at the intersection of three major tectonic plates: the Indo-Australia, Eurasia, and Pacific plates. Consequently, various

regions in Indonesia are susceptible to disasters such as earthquakes, tsunamis, and soil liquefaction (Rachman et al., 2025). Central Sulawesi Province is one of the regions with a complex history of disasters, marked by major disasters that have had a significant impact on the social, economic, and environmental conditions of the community (Karo et al., 2024). Furthermore, the post-disaster recovery process continues to face various challenges, particularly in terms of social and economic rehabilitation of affected communities. This indicates that the disasters that occurred in Central Sulawesi have caused multidimensional impacts, requiring comprehensive and sustainable responses (Elintia et al., 2024). This suggests that disaster mitigation cannot be the sole responsibility of the government; it requires the education sector to build public awareness and preparedness from school age. A review of the literature on disaster risk management in Indonesia indicates that the diverse range of disaster threats requires synergy between structural and non-structural mitigation measures, including strengthening community capacity through education and enhancing disaster literacy (Santoso et al., 2025). Formal disaster-risk education implemented in schools represents an effective strategy for fostering community preparedness from an early age (Suryadi et al., 2024). (Ihsan et al., 2023) Research confirms that disaster mitigation education plays a crucial role in enhancing public knowledge, attitudes, and skills in managing disaster risks, making it an essential component of sustainable disaster risk reduction strategies. Integrating disaster-related content into the curriculum enables students not only to understand disaster risks but also to respond to emergency situations in an appropriate and organized manner. Furthermore, this sustainable approach fosters a culture of disaster awareness that strengthens community resilience holistically (Mulyani et al., 2024).

Social Studies is well positioned to integrate disaster mitigation education because it examines human relationships with the environment, social change, and geographical factors—key drivers of disasters (Apriyani et al., 2025). Social Studies explores human relationships with the environment and the accompanying social dynamics, making it a relevant subject for teaching disaster literacy to students (Aulia & Aji, 2024). An interdisciplinary approach to Social Studies education enables the integration of disaster mitigation content, enhancing students' understanding of risks and fostering their awareness of and preparedness for disaster threats in their local area (Mulianingsih et al., 2024). Furthermore, the contextual and real-life-oriented nature of social studies education offers significant opportunities to develop more meaningful and practical disaster mitigation education (Windy et al., 2024). In practice, however, Social Studies instruction at junior high school is still dominated by textbooks and verbal content delivery, resulting in a lack of connection between learning and students' real-life experiences (Asmaida, 2021). The limitations of a learning approach that still focuses on textual delivery result in a less interactive learning process that cannot optimally accommodate students' learning needs (Radya et al., 2023). Consequently, students tend to have a conceptual and theoretical understanding of disaster mitigation, which fails to foster the internalisation of the attitudes and preparedness skills necessary for addressing disaster risks in their local communities (Adhani & Suryadi, 2025).

One effective way to address learning challenges, such as low student engagement or difficulty understanding abstract concepts in social studies, is to integrate contextual and engaging learning materials (Khoiriyah et al., 2025). Using media relevant to students' real-life situations has been shown to improve information retention and promote the development of cognitive abilities (Wibowo, 2023). A study by (Yasin, 2023) found that students who engage with media tailored to their cultural or environmental context tend to have a deeper understanding and are better able to apply their knowledge in new situations. Educational comics are an effective teaching tool because they present learning materials in a visual and narrative format, helping students to understand concepts more easily and meaningfully (Indriana et al., 2024). Integrating visual media such as educational comics serves not only as an aesthetic tool but also as a cognitive bridge linking theoretical knowledge to the social realities students experience (Saputra & Parisu, 2024). Compelling narratives combined with visual illustrations relevant to everyday life have been shown to enhance students' retention of complex material, such as disaster mitigation (Syafrita et al., 2021). Research findings (Noviana et al., 2020) show that

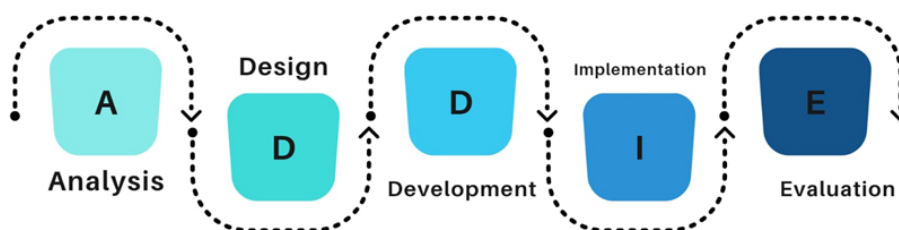
comics about disaster mitigation, such as KOASE, are a suitable learning medium because they help students to understand disaster-related concepts. Another study found that e-comics can improve students' critical thinking skills and disaster preparedness, as the visual narrative makes it easier for students to relate concepts to real-life situations (Laberta et al., 2025). This aligns with the demands of 21st-century learning, which emphasizes critical thinking skills and situational awareness of the surrounding environment (Subro & Fawaid, 2025).

Learning does not depend solely on media use; it is also influenced by incorporating local wisdom into the process (Maharani & Muhtar, 2022). Cultural values developed within the community can serve as contextual learning resources, helping students gain a deeper understanding of concepts, strengthen their cultural identity, and enhance their social awareness (Rismawati et al., 2025). Applying local wisdom to the learning process plays a significant role in building character and instilling social values in students. By reinforcing cultural values such as mutual cooperation, tolerance, responsibility, and environmental awareness, students gain cognitive understanding and internalize the social norms and attitudes prevalent in society. This approach enriches moral understanding and reinforces students' cultural identity. Thus, the learning process becomes more contextualized and relevant, and takes on greater significance in the face of globalization (Astuti et al., 2026). Central Sulawesi is a context in which local wisdom, such as the practice of mutual aid, community knowledge about the environment and social experiences in facing disasters, holds great potential for integration into social studies education. Connecting academic content with local social and environmental realities enables students to understand the material in a more relevant and meaningful way (Mustofa & Handini, 2020). Integrating local wisdom into the learning process helps create a more relevant and meaningful learning experience for students, as the curriculum connects to the realities of their daily lives. This approach enables students to connect academic knowledge with familiar socio-cultural practices, making the learning process more contextual and easier to understand (Damayanti et al., 2024). This is consistent with the findings of a study by (Lestari et al., 2025), which indicated that students who received disaster mitigation education based on local wisdom demonstrated statistically significant improvements in understanding compared to those who did not receive such instruction. These findings reinforce the idea that integrating cultural values and local practices into the learning process enhances students' preparedness for disaster risks by making the presented material more contextual, meaningful, and aligned with their social environment. Thus, integrating local wisdom into social studies education can strengthen students' conceptual understanding while fostering social awareness, environmental concern, and a strong cultural identity (Alifauzzahra et al., 2025).

Numerous studies have examined the development of comic-based learning media for disaster mitigation education. However, research that specifically integrates educational comics, disaster mitigation content and local knowledge from Central Sulawesi into junior high school social studies instruction remains limited. Some studies focus solely on comic media, while others emphasize disaster mitigation or local wisdom in isolation. This study therefore aims to develop educational comics on disaster mitigation based on Central Sulawesi's local wisdom and assess their suitability as social studies learning materials in junior high schools. This study aims to contribute to the development of more creative, context-based social studies learning materials while improving students' understanding of disasters and strengthening their cultural identity.

METHOD

This study uses the research and development (R&D) method to produce an educational comic on disaster mitigation based on Central Sulawesi's local wisdom. The comic is intended for use in Social Studies instruction at the junior high school level, and the study also assesses its suitability and practicality (Yani & Wahyono, 2020). The product was developed by referring to the ADDIE model, which comprises five stages: analysis, design, development, implementation and evaluation (Rayanto, 2020: 33).

Figure 1. Model instructional ADDIE

The ADDIE model was selected for its characteristics, which provide a planned, systematic, and problem-solving approach to instructional design. This enables the process of designing, creating, and refining instructional materials to be carried out in stages through validation and revision. Furthermore, this model's flexibility makes it easier for researchers to adapt media development to learners' needs, the characteristics of social studies material, and the learning context related to local environment-based disaster mitigation (Sultan & Kasim, 2024).

This study was conducted at SMP 3 Palu and focused on eighth-grade students as the primary users of the developed media. The research subjects comprised two groups: an expert validation group and a user group (the students). The validation group consisted of three experts specializing in different areas: one expert assessed the appropriateness of the comic's content based on indicators such as relevance, depth, and breadth, as well as the integration of local wisdom values. Next, an educational media expert evaluated the comic's visual presentation and design quality as a learning medium, covering visual presentation, graphic design, and media functionality. Finally, a language expert assessed the language used in the comic to ensure that it was appropriate for the students' abilities and effective as a learning medium. This assessment focused on text readability, the effectiveness of sentence structure, and adherence to Indonesian language conventions.

This study aims to develop an educational comic on disaster mitigation based on the local wisdom of Central Sulawesi by applying both quantitative and qualitative data analysis techniques. Quantitative analysis was used to process evaluation data from expert validators—including subject matter experts, media experts, and language experts—as well as student feedback during the product pilot phase. Qualitative analysis was used to process feedback in the form of suggestions and comments from expert validators as a basis for improving and refining the comic being developed.

The quantitative data analysis procedure in this study was conducted in several stages. First, the researcher summarised and grouped the data obtained from the expert validation sheets and the results of the practicality tests conducted with the students. The instrument used a four-point Likert scale for each item's rating score: 1 (strongly disagree), 2 (disagree), 3 (agree), and 4 (strongly agree). This scale was chosen to avoid respondents selecting the middle (neutral) option, thereby clarifying the evaluation of the developed media (Pradana & Mawardi, 2021). Furthermore, descriptive statistics were used to analyze the collected quantitative data and obtain the mean score for each indicator, as well as the overall mean score across all evaluation aspects. The mean score was calculated using the following formula.

$$P = \frac{\sum X}{\sum Xi} \times 100\%$$

Description:

P = Validity Percentage

$\sum X$ = Score obtained

$\sum Xi$ = The maximum possible score

During the evaluation phase of the ADDIE model (Analysis, Design, Development, Implementation, Evaluation), the average scores obtained are converted into feasibility categories to assess the quality of the developed product. The conversion of average scores into feasibility and practicality categories is based on score intervals determined according to the rating scale used. The criteria for interpreting the feasibility and practicality scores of learning media according to (Akbar, 2013) in (Slamet, 2022) are presented in the following table 1.

Table 1. Feasibility score criteria

No	Percentage Range	Category
1.	85,01%-100%	Highly Recommended / Very Practical
2.	70,01%-85,00%	Fairly Decent / Fairly Practical
3.	50,01%-70,00%	Less Appropriate / Less Practical
4.	01,00%-50,00%	Not Appropriate / Not Practical

RESULT AND DISCUSSION

RESULT

This study uses the ADDIE (Analysis, Design, Development, Implementation and Evaluation) model as a framework for developing comic-based educational learning materials on disaster mitigation rooted in local wisdom. The ADDIE model is a systematic, iterative instructional design process in which each stage is interconnected, allowing continuous improvement based on evaluation results at each stage (Siregar & Rhamayanti, 2025). Research by (Cahyadi, 2019) also suggests that the ADDIE model is effective in developing learning materials as it enhances student engagement and comprehension through its systematic, user-centered approach. This aligns with research (Perwitasari, 2025) indicating that the ADDIE model is effective in developing instructional materials because its systematic stages enhance student engagement and understanding through a design focused on learning needs and ongoing evaluation.

Analysis Phase

The analysis phase was the first step in this study, focusing on identifying learning needs and describing the conditions on the ground before developing the instructional materials (Sugihartini & Yudiana, 2018). During this phase, the researcher conducted preliminary observations at SMPN 3 Palu, covering aspects such as the needs analysis, student characteristics, the curriculum, and disaster-related content in social studies instruction.

Based on observations at SMPN 3 Palu, several issues in social studies instruction were identified. First, students remain unmotivated when learning disaster mitigation material. Students tend to be passive, merely listening to the teacher's explanations without participating actively. Secondly, students' understanding of disaster mitigation is limited to memorising definitions, and they are unable to connect the material to their surroundings. Furthermore, learning still relies too heavily on textbooks as the primary resource. The media used are not yet contextualised and do not draw on the experiences of natural disasters in Central Sulawesi.

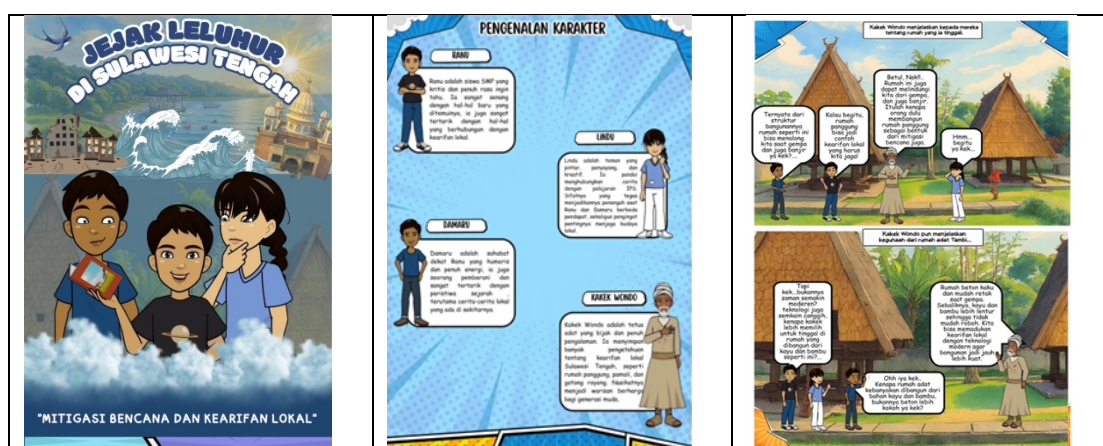
Consequently, disaster mitigation material is only understood theoretically rather than as practical knowledge for daily life. This situation highlights the disconnect between learning materials and the social realities experienced by students living in disaster-prone areas. Based on these findings, there is a clear need for contextual learning materials that bridge the gap between disaster-related concepts and students' real-life experiences. Educational comics integrating visuals, storytelling and local wisdom are expected to enhance student engagement and conceptual understanding.

Design Phase

The design process begins with an analysis of students' learning needs and characteristics (Siregar & Rhamayanti, 2025). At this stage, a product design is developed to guide the creation of educational comics on disaster mitigation. First, the learning objectives were developed in accordance with the social studies learning outcomes of the Merdeka Curriculum. The learning objectives were formulated to ensure that students can understand the concept of disaster mitigation, identify types of disasters in their surrounding environment, and demonstrate preparedness and social awareness regarding disaster risks. Furthermore, the Social Studies competencies integrated into the comic medium are carefully selected. The competencies addressed relate to human-environment interactions, social change, toponymy, and efforts to mitigate natural disasters. The Social Studies content is then linked to disaster mitigation and the local wisdom of Central Sulawesi, ensuring the learning is contextual and relevant to students' lives.

The next step is to determine the comic's storyline. The story uses a narrative approach and features a junior high school student as the main character. The storyline depicts students' daily lives; it begins with an assignment related to a disaster event, through which the characters learn about mitigation efforts based on local wisdom and the importance of community cooperation. The presentation aims to ensure that mitigation is understood not merely as theory, but as concrete actions students can take. Once the storyline was established, the comic's synopsis and visual design were developed. The synopsis includes a brief overview of the story, the learning message, and the local wisdom values incorporated. The visual design includes character designs, settings, dialogue, comic panels, color schemes, and page layout to ensure the comic is engaging and easy for students to understand. In addition, during the design phase, the researchers developed research instruments to assess the product's feasibility and practicality. These instruments included validation forms for subject matter experts, media experts, and language experts using a Likert scale, as well as a student response questionnaire to determine the practicality of using comics in the learning process.

Figure 2. Design of the Comic Panel



Development Phase

The development stage is when the product is created based on the planned design. During this stage, educational materials in the form of comics about disaster mitigation based on local

wisdom are created. The comic was created using digital applications. The character designs were created using the Pixton website to produce illustrations that align with middle school students' personalities. Subsequently, the processes of composing comic pages, arranging panels, placing dialogue, coloring, and layout were carried out using Canva. These applications were chosen to produce a visual presentation that is engaging, communicative, and easy for students to read. The comic's content is then integrated with social studies material, disaster mitigation concepts, and the values of local wisdom from Central Sulawesi. Social studies material is presented through character dialogue and story situations, while disaster mitigation concepts are illustrated through the characters' actions when facing earthquakes, tsunamis, floods, and liquefaction. Local wisdom values are incorporated through behaviors such as mutual aid, social responsibility, and the local community's knowledge in dealing with disasters.

Once the development process was complete, the first product, a draft educational comic, was produced. This product was then evaluated for suitability through expert validation. Three experts conducted this evaluation: a social studies specialist, an educational media specialist, and a language specialist. The experts provided evaluations and suggestions for improvements to the content, visual presentation and language usage. These were used to revise the product, ensuring that the resulting comic was more suitable for educational use.

Implementation Phase

The implementation phase was conducted to test the practicality of using the media in real-world learning situations. The product pilot test was conducted at SMPN 3 Palu, with one class acting as the research subject, specifically, a Year 8 class of 27 students. During this phase, the researcher was able to observe directly how the educational comic media were used in the learning process and assess their ease of use, appeal and the students' responses to the developed media.

At this phase, the developed comics were used directly as a social studies learning medium. Students were asked to read the comics independently or in groups and then discuss the content of the stories, the disaster mitigation material and the messages contained within the comics. During the lesson, students were more active, asking questions and participating in discussions, because the material was presented in an easy-to-understand format with images and a storyline. Once the learning activity was complete, students filled out a response questionnaire to evaluate the medium's practicality. This covered aspects such as ease of use, visual appeal, clarity of the material and usefulness in understanding disaster mitigation. The student response data is then collected to inform the analysis of the product's practicality.

Evaluation Phase

The evaluation phase was conducted to determine the suitability and practicality of the developed educational comic media. The evaluation was conducted comprehensively by calculating the percentage of expert validation results and the percentage of responses from students who had completed the questionnaire during the implementation phase. The evaluation process involves calculating the total score obtained from each item on the expert validation sheet and comparing it to the maximum possible score. The result is then converted into a percentage using a predetermined formula. The eligibility percentage derived from the expert validation is used to determine the media's quality category—whether it falls into the “highly eligible,” “eligible,” “sufficiently eligible,” or “ineligible” category. Meanwhile, the percentage of student responses was used to determine the practicality of using comics in learning—whether they fell into the categories of very practical, practical, somewhat practical, or impractical.

The results of this evaluation serve as the basis for determining whether the educational comic book on disaster mitigation based on local wisdom from Central Sulawesi meets the criteria for suitability and practicality as a social studies learning resource in junior high schools. Based on these results, it can be determined whether the developed product is suitable for wider

implementation or requires further improvements before being used in actual classroom instruction. This study presents findings from the analysis of data collected during the research and development of educational comic media. The data collection process involved two groups of respondents with different roles: expert validators and students as the end users of the media. The expert validators, consisting of three individuals: a subject matter expert, a media expert, and a language expert, were responsible for assessing the product's suitability based on aspects within their respective fields of expertise. Meanwhile, the students provided feedback on the practicality of using the media in the learning process. Through the involvement of these two groups of respondents, a more comprehensive picture was obtained regarding the quality of the educational comic developed, both in terms of its suitability and ease of use in real-world learning contexts. The analysis results were then presented as the basis for evaluating the educational comic. The following section provides a more detailed description of the data analysis results for each group of respondents.

Product Feasibility Validation

Three validators with expertise in content, media, and language conducted the product feasibility validation process. This validation evaluated the quality of the developed product based on specific criteria and determined whether it is suitable for educational use or requires improvement. Validation results from three expert validators indicate that the educational comic media on disaster mitigation based on local wisdom from Central Sulawesi received an overall score of 95%. When converted using the criteria for interpreting the suitability of learning media, this score falls within the range of 85.01%–100%, which is classified as "Highly Suitable." This score indicates that the developed product has met the specified suitability criteria and is ready for implementation in social studies education. The detailed evaluation results from each validator are presented in the following table:

Table 2. Product validation test results

No.	Judgment	Percentage	Category
	Media Expert	95%	Highly
	Content Expert	97,5%	Highly
	Language Expert	92,5%	Highly
	Overall Percentage	95%	Highly

More specifically, each validator's evaluation yielded positive results. Dr. Mohammad Djamil M. Nur, conducted media expert validation and gave it a score of 95%. This evaluation covered aspects such as attractive visuals, high-quality and informative illustrations, clear image legibility, and the comic's overall appeal. Because all of these aspects met the principles of good educational media development, the comic is considered able to capture attention and help students understand the content.

Additionally, Rizka Fadliah Nur, achieved a score of 97.5% in the content expert validation. This was the highest score among the three validators. The subject matter expert evaluated the content's alignment with social studies learning competencies, the depth of the concepts presented, and their relevance to students' daily lives. This very high validation score indicates that the disaster mitigation material included in the comic is optimally designed and aligns with the current social studies curriculum.

Meanwhile, the linguistic validation conducted by Ira Madhana Solihin, yielded a score of 92.5%. The assessment covered communicative language use, sentence structures appropriate for junior high school students' developmental level, and vocabulary suitable for the target audience. While this percentage is slightly lower than the other two validators', it still falls within the "highly acceptable" category, indicating that the language used in the comic is quite good. The validation results for these three aspects indicate that the educational comic on disaster mitigation based on local wisdom from Central Sulawesi meets the eligibility criteria for content, media quality, and language use. Therefore, this product is deemed highly suitable

for use as a social studies learning resource at the junior high school level and may proceed to the implementation phase.

Product Usability Test

Data collection on the media's practicality was conducted by distributing a student response questionnaire based on indicators of the learning product's practicality. The questionnaire was developed to measure the ease of use, appeal, comprehensibility, and usefulness of educational comics about disaster mitigation based on local knowledge from Central Sulawesi that support the social studies learning process. Ease of use is reflected in statements assessing whether the comic can be used as a practical learning resource, whether it confuses students, and whether it aids understanding of the material without significant obstacles. The comic's visual appeal is measured through students' assessments of its visual appeal, the quality of the illustrations, and the comic's design, which can enhance reading interest and minimize boredom during the learning process. The clarity of the material involves evaluating the extent to which the story's content, language use, and presentation of disaster mitigation concepts and local wisdom can be understood in line with junior high school students' developmental level. Meanwhile, utility refers to the comic's ability to boost students' motivation to learn, foster environmental awareness and concern, and help students connect social studies material to their daily lives. The practicality test of the educational comic was conducted on February 5th, 2026, with 27 eighth-grade students from SMPN 3 Palu serving as respondents. This pilot test was conducted after the educational comic had been used in the social studies learning process. The results of the practicality assessment are presented in the following table:

Table 3. Product usability test results

Aspect	Maximum Score	Obtained Score	Percentage	Category
The Practicality of Using Educational Comics for Disaster Mitigation	2.160	1.831	84,77%	Fairly Practical

The practicality analysis results indicate that the educational comic on disaster mitigation based on local wisdom in Central Sulawesi received a score of 1,831 out of 2,160. Based on the percentage calculation, the practicality score was 84.77%. Based on the suitability and practicality criteria for learning media, this score falls within the 70.01%-85.00% range and is classified as "Fairly Practical."

This score indicates that the comic-based learning material meets the criteria for classroom practicality, although there are still areas for improvement. The 84.77% response rate indicates that, overall, students responded positively to using comics as a social studies learning tool. They found the comics to be user-friendly, engaging to read, and effective in helping readers understand disaster mitigation and local wisdom. Additionally, this medium was found to boost learning motivation and make the learning process more enjoyable compared to conventional methods. However, the "Fairly Adequate" rating indicates that some technical aspects still need improvement. Based on an analysis of the negative feedback in the survey, improvements were focused on shortening certain sections of the story that were considered too long, enhancing the clarity of illustrations in specific sections, and adjusting the text size and layout to make it more reader-friendly. These improvements are essential to ensure that the media is not only adequate but can be upgraded to the "Adequate" or even "Very Adequate" category in the next development phase.

In general, the findings of this study indicate that the educational comic media on disaster mitigation based on local wisdom not only meets the criteria for suitability as a learning medium

but also demonstrates a high degree of practicality in supporting the social studies learning process in the classroom. This medium can facilitate learning that is more interactive, engaging, and relevant to the environmental conditions of students living in disaster-prone areas.

The practicality and effectiveness of using comic media in this study align with the findings of (Aprianti & Nadiyyah, 2024), who revealed that educational comics with visual illustrations and simple dialogue can help students understand disaster mitigation concepts more easily and engagingly. Comic media provide a more concrete learning experience because information is presented through a combination of images and communicative narration, so that students not only read but also visualize the disaster situations presented. This increases student engagement during the learning process, as they are more interested and active in following the storylines presented. Additionally, presenting the material in comic form also makes it easier for students to connect disaster mitigation concepts with real-world conditions in their surrounding environment.

Overall, the practical results demonstrate that the educational comic is suitable for 8th-grade social studies instruction and has received positive feedback from students. The comic meets the basic criteria of ease of use, visual appeal, content clarity, and effectiveness in supporting understanding of disaster mitigation concepts. With minor revisions based on student feedback, the comic could become even more effective in supporting the implementation of the Merdeka Curriculum.

CONCLUSION

The development of educational media in this study resulted in an educational comic on disaster mitigation based on the local wisdom of Central Sulawesi, created using the ADDIE model and tailored to the social studies curriculum at SMPN 3 Palu. The comic's visual illustrations and simple dialogue have helped students understand disaster mitigation concepts through Central Sulawesi's local values, such as mutual aid, social solidarity, and community knowledge in coping with disasters. Subject matter experts, media experts, and language experts validated the media, achieving an overall score of 95% (rated "highly suitable"). Students' practicality test yielded a score of 1,831 out of 2,160 (84.77%), indicating that the media can be used for learning, though several aspects of the content still require refinement. The use of comics in social studies instruction has also shown a positive impact on students' motivation and understanding of disaster mitigation. This is because the material is presented in a contextual manner that can easily be related to the disaster-prone conditions of their local communities.

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