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Questionnaire of Natural Disaster for Mitigational Education

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ABSTRAK

Pengetahuan Mitigasi sangat penting terutama bagi mereka yang tinggal di daerah dengan bencana tahunan. Oleh karena itu, analisis pengetahuan anak tentang mitigasi juga turut penting karena menjadi dasar dalam menyusun pelajaran terkait pengenalan kesiapsiagaan bencana alam. Penelitian ini bertujuan untuk mengembangkan kuesioner terkait kesiapsiagaan bencana alam berdasarkan ranah kognitif, afektif, dan psikomotorik. Penelitian ini adalah penelitian kuantitatif dengan menggunakan pendekatan deskriptif kuantitatif. Metode penentuan sampel yang digunakan adalah purposive sampling. Metode pengembangan angket dalam penelitian ini terdiri dari beberapa tahapan yaitu penyusunan item, pemilihan item, pemilahan item, dan validasi item. Subjek penelitian ini adalah 5 dosen 30 mahasiswa pada tahap penyusunan item, 2 dosen dan 2 praktisi pada tahap pemilihan item, 150 siswa SD pada tahap pemilahan, dan 170 siswa SD pada tahap validasi. Metode pengumpulan data yang digunakan yaitu cross-sectional. Kemudian kuesioner yang dibuat dilakukan uji validitas dan reliabilitas. Hasil penelitian menunjukkan bahwa kuesioner bencana alam untuk pendidikan mitigasi yang dikembangkan telah memenuhi validitas dan reliabilitas. Implikasi penelitian yaitu melalui penelitian ini mampu meningkatkan pendidikan mitigasi bencana di sekolah.

ABSTRACT

Mitigation knowledge is essential, especially for those who live in areas with annual disasters. Therefore, analyzing children's knowledge about mitigation is also necessary because it is the basis for preparing lessons about introducing natural disaster preparedness. This research aims to develop a questionnaire related to natural disaster preparedness based on the cognitive, affective and psychomotor domains. This research is quantitative research using a quantitative descriptive approach. The sampling method used was purposive sampling. The questionnaire development method in this research consists of several stages: itemm preparation, item selection, item sorting, and item validation. The subjects of this research were 5 lecturers, 30 students at the item preparation stage, 2 lecturers and 2 practitioners at the item selection stage, 150 elementary school students at the sorting stage, and 170 elementary school students at the validation stage. The data collection method used is cross-sectional. Then, the questionnaire was created and tested for validity and reliability. The research results show that the developed natural disaster questionnaire for mitigation education meets the requirements for validity and reliability. The research implies that this research can improve disaster mitigation education in schools.

1. INTRODUCTION

Knowledge related to natural disaster mitigation focuses on adults and children at the elementary school level. Knowledge related to disaster mitigation is essential for children, especially those who live in areas where annual disasters often occur. Indonesia is one of the places where natural disasters often occur. Natural disasters in Indonesia vary widely, ranging from hydrological disasters, droughts, or even hurricanes (Bronfman et al., 2019; Frantzeskaki et al., 2019). Several studies to measure children's disaster mitigation knowledge have been carried out. For example, conducted research related to children's ability to deal with Mount Merapi's eruption (Meliana et al., 2020; Wardaya & Ma, 2021). Also researched disaster

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mitigation knowledge in a community in the Aceh region that focused on earthquake and tsunami disasters (Hutagalung et al., 2020; Meliana et al., 2020). This shows that disaster mitigation knowledge is essential and needs to be introduced in the school environment.

Analysis of children's knowledge in the community is fundamental because it becomes the basis for schools in preparing lessons related to the introduction of natural disaster preparedness. One area in Indonesia with a constant level of natural disasters and occurs annually is the South Kalimantan. Although this area is not a ring of fire area like other areas in Indonesia, South Kalimantan has the potential to experience natural disasters such as floods, landslides, and forest and land fires. These three disasters are widespread every year. For example, the flood disaster in early 2021 in South Kalimantan resulted in the death of 5 people and 112 people displaced (Mailisa & Idami, 2022; Muhtar & Meiwanda, 2022).

Although mitigation is essential, the central and local governments are still not optimal in pursuing this mitigation education. This results in students' lack of knowledge about disaster mitigation (Dewi & Kurniati, 2022; Hutagalung et al., 2020). The absence of a standardized questionnaire related to disaster mitigation makes identifying students' mitigation knowledge difficult. This difficulty will impact the unpreparedness of mitigation materials needed to create or compile mitigation materials for students. This lack of knowledge will make students' attitudes less resilient when facing disasters or disaster mitigation efforts. This problem is reinforced by previous research, stating that a lack of knowledge will make students less resilient in facing disasters (Hutagalung et al., 2020; Septaria & Dewanti, 2021). Other research also shows that one of the factors that mitigates socialization and education is still not optimal (Mailisa & Idami, 2022; Rahmawati & Fatmawati, 2022). Good mitigation knowledge positively impacts. However, the fact that mitigation efforts have not been optimal and the lack of identification of knowledge in students makes efforts to identify knowledge need to be carried out more vigorously.

Based on these problems, it is necessary first to develop a questionnaire to identify the knowledge and attitudes of students in South Kalimantan related to preparedness in the face of natural disasters. The questionnaire to be developed will adopt the cognitive-affective-conative model to get a comprehensive picture of student preparedness. Cognitive refers to the understanding of the ability to think about an event or event, or in this case, the child's knowledge of what to do when a natural disaster occurs. Furthermore, affective will lead more to students' emotions and motivation in dealing with it. Finally, the conative emphasizes students' natural tendency to decide what actions to take when a disaster occurs (Bronfman et al., 2019; Frantzeskaki et al., 2019).

Questionnaires using models that refer to the cognitive, affective, and conative domains have been widely developed. The development of questionnaires utilizing this method is considered more effective for measuring human psychological processes because it can measure thinking ability, emotional management and capacity, and decision-making ability (Ahmad Basri et al., 2022; Hasim et al., 2022). Previously, studies have developed questionnaires using this model to look at sustainable consumption (SC) (F. Ali et al., 2021; Grassini & Laumann, 2020). In addition, other studies state that this questionnaire model is very suitable for measuring teacher attitudes toward technology use (Valtonen & Mäkinen, 2022; Wahyuni, 2018). The researcher developed a natural disaster preparedness questionnaire in South Kalimantan based on these things. Through this questionnaire, it is hoped that other researchers can identify the natural disaster preparedness of students in elementary schools in future studies.

Based on the above explanation, this research was conducted to introduce a contextual questionnaire related to natural disaster preparedness, which was specifically designed to harmonize with the local landscape in South Kalimantan. The benefit of this questionnaire is that preliminary data is obtained that will form the basis for developing appropriate mitigation materials for students. This study centers on the questionnaire's content, which is tailored to cover the spectrum of natural disasters experienced in the South Kalimantan region. The comprehensive description of the trajectory of the questionnaire development, described extensively in this study's results section, illustrates the meticulous process that was undertaken.

2. METHOD

A quantitative descriptive approach was used as method in this study. This method was used in order to generate objective result from each statements that used in questionnaire. As for sampling technique, purposive sampling was used in this study's sampling technique. purposive sampling was chosen because it would make data collection faster due to its close distance to reasearcher daily location. The development of statement items from this questionnaire consists of several stages, namely item generation, item selection, item purification/sorting, and item validation . The stages and what each stage did were depicted in Figure 1.

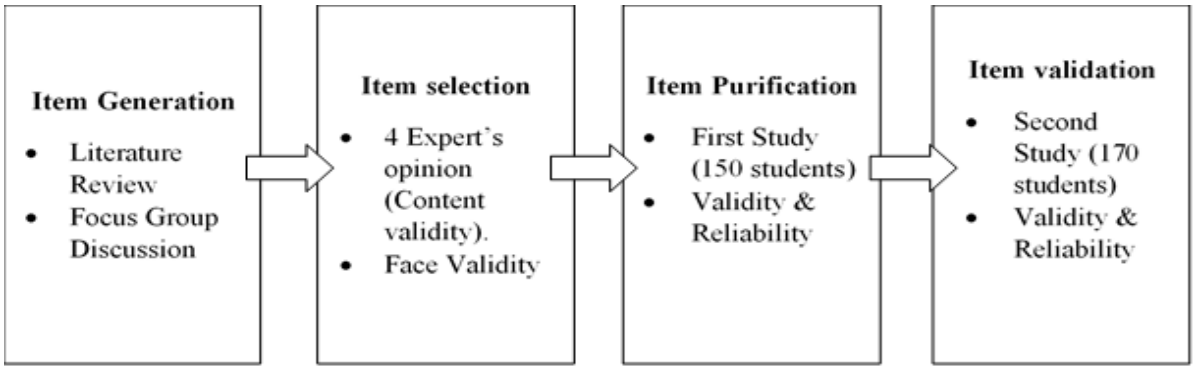

Figure 1. The Stage of Questionnaire Development

As can be seen in Figure 1 regarding the preparation of the questionnaire according to there were four stages used. The first stage is item generation. Generation items in this study used two approaches, namely deductive and inductive approaches. From the results of this analysis, the researcher made a statement in the questionnaire items. Furthermore, the inductive approach was carried out through focus group discussions (FGD) with peer lecturers and also university students to get some input statements that were appropriate in stating items related to disaster mitigation in the cognitive, affective, and conative domains. In FGD, the number of lecturers involved was five people, and the number of university students involved were 30 people. All of questioner questions were based on the cognitive, affective, and conative domains in order to have good questions regarding to each domains.

The second stage is item selection. After the statement items are compiled in the first stage, the item was validated in content based on input from the experts, whether the item reflects natural disaster mitigation or not (Krongthaeo et al., 2022; Veronica et al., 2022). In this section, four experts are selected, of which two of them were lecturers, and the other two were practitioners. The selected lecturers were lecturers who have experience in preparing questionnaires and research in disaster education, while the teachers themselves were selected teachers who have taught over ten years and were competent or have explained a lot of disaster content in the classroom. After implementing content validity, then face validity was carried out by distributing questionnaires to lecturers who have expertise in the field of language to check the statements in the questionnaire regarding words, clarity, and completeness of sentences in the questionnaire. Face validity was carried out by two Indonesian language lecturers.

The third stage is itwm purification/ sorting. At this stage, to purify/short the statement items that had passed in item selection was conducted the study. The first study was carried out by involving 150 elementary school students, considering that elementary school students were the main target for implementing this questionnaire later. This stage look at the validity and reliability of each item developed. From this state, if invalid and reliable statement items were available would be removed from the questionnaire.

The fourth or final stage is item validation. A second study was conducted to measure the validity and reliability of each statement at the item validation stage. 170 elementary school students were involved as subject in this study stage. Similar to the item purification stage, when there were items assumed not valid and not reliable, those items would be deleted resulting only valid and reliable item statements in this study questioner. In measuring the validity and reliability of the statement items in the Pearson product-moment test questionnaire to test item validity, the researcher used corrected items to total correlation.

3. RESULT AND DISCUSSION

Result

In the results section, we elaborate on the four stages of questionnaire development, namely item generation, item selection, item purification, and item validation. Detailed explanations are provided regarding the underlying principles of each stage and the process of selecting statement items, leading to the final version of the questionnaire. In the early stages of preparing statement items, researchers looked for references related to the following matters to measure students' cognitive, affective and conative domains related to natural disaster preparedness. Considerations in preparing the questionnaire referred to some literature from scientific articles and books such as disaster risk reduction and preparedness for natural disasters. The results of the studies in scientific articles and books were then developed into statement items in accordance with the conditions of natural disasters that often occur in the South Kalimantan area.

Furthermore, the implementation of FGD with lecturers and students was also carried out to get input and suggestions regarding the statement items. The FGDs were very helpful for researchers, especially in compiling the specifics of the questionnaire related to natural disasters, which focused on local natural disasters in South Kalimantan. The final result of preparing statement items based on literature review and FGD based on cognitive, affective, and conative models contains several indicators, which are presented in Table 1.

Table 1. Indicators in the Cognitive, Affective and Conative Domains on the Questionnaire

No	Domain	Indicators	Item number of statements
1	Cognitive	Identify triggers for natural disasters (floods, landslides and forest fires)	6
		Identifying the post-disaster impact	5
		Explain the preparedness steps that must be taken before, during and after a disaster	4
2	Affective	Comply with local government regulations in natural disaster management	7
		Forming opinions regarding appropriate handling during and after disasters	6
3	Conative	Sorting out the most appropriate actions to take in pre-, during and post-disaster mitigation	8

From the three domains, divided into six main indicators, the researcher then arranges statement items based on these indicators with a total number of initial statement items as many as 36 statements. The 36 statements will be selected at the next stage through expert validation and face validity. Identifying triggers for natural disasters such as floods, landslides and forest fires is the main factor in the questionnaire for the cognitive domain. This identification knowledge becomes a basic indicator of the cognitive domain of disaster mitigation. Many triggers such as meteorological disasters, chemicals, oil, environmental pollution are triggers for disasters.

Meanwhile, the ability to explain the steps that must be taken in conditions before, during and after a disaster is basic knowledge that needs to be possessed regarding mitigation. Findings in the field show that the ability to realistically simulate mitigation, develop mitigation lessons, can make mitigation implementation effective. This needs to be included in the questionnaire because the findings in the field show that many are not aware of the cycle of disasters. This has an impact on the mitigation efforts that need to be done. Therefore, domain knowledge is the basis of mitigation efforts. As long as the knowledge domain is able to play a role in influencing the affective and conative domains, mitigation efforts can be successful. The indicators used for the affective and conative domains were also selected based on the order of success of the mitigation efforts. For example, compliance and opinion assessment given on mitigation aspects can indicate the level of compliance in carrying out mitigation efforts. Meanwhile, the conative domain is chosen for mitigation actions before, during and after a disaster.

At the item selection stage, at least four statements were deleted based on input from experts and practitioners. The basis for deleting these four statements is because they have the same intent and purpose as other statements. Four were deleted, two were statements from the affective domain, one from the cognitive domain, and one from the conative domain. In addition to input from experts, face validity from linguists was also carried out for checking the questionnaire from aspects of understanding, clarity, and completeness of sentences. Linguists on face validity recommend changing sentences from two statements to improve students' understanding later and not to cause ambiguity. This selection was intended to generate much needed data, taking into account the effectiveness, limitations and functions of each question.

At this stage, the validity and reliability of the statement items that have been prepared are carried out. Based on the stages in item selection, there are 32 statements left in the questionnaire. The number of students who participated in this stage was 150 students. The number of participating students is based on the respondent-to-item ratio of 5:1 (50 respondents for 10 statement items). Because the rest of the statement items were 32 statements, then 150 students were selected by the researcher to participate in filling out the questionnaire. The questionnaire results are then used to test the validity and reliability by using the Pearson product-moment test. Furthermore, the results of the validity and reliability tests can be seen in Table 2.

Table 2. Validity and Reliability Test Results at the Item Purification Stage

Statement Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Statement Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
item 1	**0.083**	0.671	item 17	0.454	0.643
item 2	0.399	0.695	item 18	0.318	0.662
item 3	0.325	0.655	item 19	**0.271**	0.686
item 4	0.415	0.670	item 20	0.342	0.675
item 5	0.284	0.658	item 21	0.456	0.643
item 6	0.358	0.666	item 22	0.350	0.667
item 7	0.334	0.667	item 23	0.356	0.653
item 8	0.297	0.692	item 24	0.327	0.653
item 9	0.483	0.643	item 25	0.406	0.649
item 10	0.298	0.659	item 26	0.382	0.649
item 11	0.420	0.668	item 27	0.348	0.674
item 12	0.298	0.676	item 28	0.326	0.675
item 13	0.391	0.650	item 29	0.422	0.649
item 14	**0.293**	0.664	item 30	0.349	0.681
item 15	0.376	0.665	item 31	0.446	0.646
item 16	0.353	0.674	item 32	0.315	0.670

Based on the data obtained at the item purification stage, the data obtained is compared with the data in Table R with the formula DF = N – 2, where N is the total statement item, which is 32. Based on these results, the DF value = 30, and the R table value is 0.2960. Next, the value in the Corrected item-total Correlation is compared with the R table value. If the value > R table, the data is valid, but the data is invalid if the value is smaller R table. Likewise with reliability, on the value of Cronbach's Alpha if Item Deleted, if the value is higher than the R table, it is reliable Otherwise, if the value is lower R table, it is not reliable. Therefore, this item sorting is intended to take only valid and reliable questions. This is intended to avoid misinterpretation or other errors in giving answers through questionnaires. Based on the results, there are at least three invalid items (marked in bold in Table 2), namely items 1, 14, 19. As for reliability, all items are reliable because of the value in Cronbach's Alpha if Item Deleted > R table. Based on this, three items were discarded and left 29 items which would then be tested for validity and reliability at a later stage.

At this stage, a second study was conducted to test the validation and reliability of the instrument that had passed the item purification stage. 29 items were tested again on students. The number of students used was 170 students using a 5:1 ratio, and also added another 20 students to get better results for validity and reliability. The results obtained at this stage are described in table 3. The data in Table 3 was a data regarding validity and reliability test at the validation stage. The 29 questions in the questionnaire were analyzed quantitatively to see how much the total correction was for each item and how much the Cronbach alpha value was if it was removed. This was done to show each item's validity and reliability included in the questionnaire.

Table 3. Validity and Reliability Test Results at the Item Validation Stage

Statement Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Statement Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
item 1	0.349	0.647	item 16	0.334	0.641
item 2	0.319	0.674	item 17	0.453	0.611
item 3	0.391	0.628	item 18	0.379	0.637
item 4	**0.158**	0.639	item 19	0.317	0.658
item 5	0.374	0.630	item 20	**0.232**	0.641
item 6	0.461	0.638	item 21	0.474	0.610
item 7	0.367	0.638	item 22	0.395	0.636
item 8	0.361	0.668	item 23	0.414	0.619
item 9	0.482	0.612	item 24	0.349	0.622
item 10	0.322	0.633	item 25	0.453	0.615
item 11	0.406	0.642	item 26	0.394	0.618
item 12	0.400	0.644	item 27	0.318	0.643

Statement Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Statement Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
item 13	0.417	0.626	item 28	0.371	0.646
item 14	0.338	0.640	item 29	0.358	0.623
item 15	0.343	0.640			

Similar to the item purification stage, at the item validation stage, validity and reliability tests were also carried out by comparing the Corrected item-total Correlation (for validity) and Cronbach's Alpha if Item Deleted (for reliability) values with the R table value. The R table value is obtained from the formula DF = N – 2, where DF = 29 – 2, and the result is 27. Based on this, the R table is 0.3115. Furthermore, through comparison with the R table value, the Corrected item-total Correlation value < R table (marked in bold in Table 3) is removed from the questionnaire. Based on the results of item validation, two items are obtained whose values are below the R table. Meanwhile, for the value of Cronbach's Alpha if Item Delete, all values > R table, which means the data is reliable. The results at this stage obtained 27 statement items that met the validity and reliability, which are presented in Appendix 1. Questionnaires from the various results of this study can be used as material for subsequent research. Valid and reliable data means that the data can be used in the questionnaire because it is valid and reliable. Valid and reliable data is important in research. This is because to avoid inconsistencies and ambiguous meanings in finding data. Frequently the research data collected can damage its validity and interpretation.

Cognitive domain was generated 9 valid and reliable question items. The questions were about knowledge related to mitigation equipment, post-disaster diseases, waterway procedures, understanding of electricity, storage of valuable documents, awareness of the environment, knowledge of signs, and understanding of post-disaster conditions. The affective domain generated 8 valid and reliable items. Questionnaire questions for the affective domain generated were relate to topics such as community activity in mitigation, the responsibility of community members in participating in mitigation, disaster education in the neighboring environment, use of clean water, afforestation, and reforestation of slope areas. The conative domain resulted 10 valid and reliable questionnaire questions. The questionnaire questions obtained ranged from choosing to hand over to the party in charge, maintaining body hygiene, participating in cleaning activities, safety priorities, sensitivity to weather developments, post-disaster preparedness, concern for the actions of people around, selecting safe vehicles, and prevention through the choice to stay away from flood area.

Discussion

The primary objective of this investigation is to develop a questionnaire designed to evaluate students' preparedness concerning natural disasters, aligning with our extensive research on disaster education methodologies in South Kalimantan. This study culminated in a validated and reliable questionnaire tailored to gauge readiness in natural disaster preparedness. This endeavor diverges from prior approaches wherein surveys predominantly centered on natural disasters specific to a particular locale, as evidenced in earlier works that fashioned questionnaires based on regional characteristics (Castañeda et al., 2020; Kurata et al., 2022). Consequently, our developed questionnaire introduces a novel, regionally attuned assessment tool aligned with the distinctive natural disaster landscape of South Kalimantan. In this segment, we expound upon our findings and their validation vis-à-vis prior research.

Systematic stages for inventorying and analyzing data related to student disaster preparedness, using deductive and inductive approach during the item generation stage of questionnaire development (Boon-Falleur et al., 2022; Wang & Tsai, 2022). The deductive approach involved a comprehensive literature review in defining the construct and determining the existence of similar questionnaires in the context of natural disaster mitigation (Jung, 2022; Raharjanti et al., 2022). Given the limited availability of questionnaires specifically related to disasters commonly experienced in South Kalimantan, such as floods and landslides, we focused on references related to disaster risk reduction and preparation for natural disasters to clarify the construct definition we aimed to develop (Bronfman et al., 2019; Hasim et al., 2022). Established stages, which have been widely applied in questionnaire development in education, we ensured the validity and reliability of the questionnaire in assessing student readiness in natural disaster preparedness (N. Ali et al., 2022; Kawasaki et al., 2022).

During the questionnaire development's item generation stage, we employed deductive and inductive approaches. To ensure a comprehensive perspective, we referred to the cognitive-affective-conative model, which has been widely used by researchers in various fields and education (Dewi & Kurniati, 2022; Han & Choi, 2019). This model allowed us to go beyond measuring and providing a holistic framework.

In addition, we also utilized an inductive approach through focus group discussions (FGD) to gather diverse perspectives on the statement items we were composing. Implementing FGD in the item generation stage was crucial as it allowed us to obtain valuable input on the indicators for each domain we were developing in the questionnaire. Furthermore, emphasized that using FGD greatly influences the quality of the questionnaire and serves as an important initial step for generating ideas in preparing the statement items.

The subsequent stage in our questionnaire development process is item selection, which involves expert validation to ensure that the items developed in the previous stage align with the indicators and domains (Mailisa & Idami, 2022; Muhtar & Meiwanda, 2022). In addition to linguistic experts who assess the clarity and comprehensibility of the sentence statements, this stage also involves experts from various fields to provide valuable insights (Frantzeskaki et al., 2019; Li et al., 2021). Previous studies highlight the significance of this stage as it establishes the groundwork before testing the questionnaire and helps minimize potential biases from the trial participants (in this case, students) (Grassini & Laumann, 2020; Hayes & Coutts, 2020). In brief, expert validation is critical in ensuring the subsequent stages' success and minimizing errors' occurrence. Moreover, the item purification stage involves 150 students, with a ratio of 5:1 based on the number of questionnaire statements (resulting in 32 items after item selection). This ratio is supported by previous studies, which suggest it as a means to mitigate participant misinterpretation during questionnaire completion (Chaiwan et al., n.d.; Veronica et al., 2022). Reliability analysis, specifically by calculating Cronbach's alpha coefficient, is a critical step in item purification. Cronbach's alpha assesses the internal consistency of item scores, indicating how much items on a scale correlate.

The results of item purification are then utilized in item validation, which involves re-testing the remaining statement items (in this case, 29 items after removing three statements). We followed the same ratio as before for item validation and involved 170 students. This stage aims to ensure that our statements are valid and reliable, minimizing inconsistencies in the statements (Hutagalung et al., 2020; Lamm et al., 2020). After removing two more statement items, 27 items remained, which were considered to have reliability in the final version of the questionnaire. The final version of the questionnaire, comprising 27 statement items, served as the foundation for our extensive research in identifying students' preparedness for natural disasters across three dimensions: cognitive, affective, and conative. While global studies have been conducted on disaster mitigation, such as COVID-19 mitigation, the context of natural disaster mitigation in Indonesia is unique due to the distinct types of natural disasters in different regions, such as tsunamis, tidal floods, and forest and land fires, which are specific to their geographical conditions (Septaria & Dewanti, 2021; Veronica et al., 2022). Our questionnaire also reflects this uniqueness, incorporating questions related to local natural disasters in South Kalimantan, such as peatland fires, floods, and landslides, which are prevalent in the area (Frantzeskaki et al., 2019; Meliana et al., 2020). Additionally, hygiene and cleanliness-related questions were included in the questionnaire, as they are relevant to flood disasters and the habit of burning garbage, which indirectly relates to peatland fires. These unique aspects distinguish our questionnaire from others developed in this field of research.

To sum up, this research introduces a meticulously developed questionnaire subjected to rigorous validation processes ensuring its reliability and validity (Daud & R., 2021; Wulandari et al., 2022). The distinctive merit of this questionnaire lies in its contextual relevance, meticulously aligned with the specific requisites, owing to its foundation on the local landscape and the prevalent natural disasters within the South Kalimantan region. Nevertheless, this research is not without limitations. Primarily, its focus remains confined to elementary school students in the Banjarmasin area, South Kalimantan, thereby warranting future studies to extend its application to students at a provincial or national scale. Additionally, the data collection method employed herein was cross-sectional, prompting a recommendation for subsequent researchers to utilize a time-series approach for item purification and validation to discern evolving trends in disaster-related perceptions over time, be it annually or monthly.

4. CONCLUSION

Based on the outcomes of the questionnaire development addressing natural disaster preparedness in South Kalimantan and encompassing cognitive, affective, and conative domains, the initial statement items crafted during the item generation phase underwent refinement to ensure adherence to the requisites of validity and reliability. The evolution of this questionnaire traversed pivotal stages, including item generation, selection, purification, and validation. This sequential process yielded a set of 27 statement items. What sets this questionnaire apart is its foundation on the specific natural disasters prevalent in South Kalimantan, such as peatland fires, floods, and landslides. Through this research, it can improve the effectiveness of disaster mitigation education programs in schools. The implication is that the use of this questionnaire can assist educators and policy makers in designing and adjusting curricula that

are more responsive to disaster mitigation needs, as well as equipping students with the knowledge and skills necessary to reduce disaster risks and impacts.

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