




## Article

# Element of Disaster Risk Reduction in Geography Education in Malaysia

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**Abstract:** Currently, there are many natural disasters such as floods, landslides, earthquakes, and climate change. These disasters certainly affect the conditions of human life from economic, social, and environmental perspectives. Therefore, it is necessary to take preventive action and learn so that people understand the potential for disasters and how to deal with them. The geography education curriculum is one of the subjects that contains topics on disaster education, but this has not been carried out thoroughly in Malaysia. This study analysed the types of natural disasters and elements of priorities for action in reducing disaster risks, based on the Sendai framework. The data were collected from the Ministry of Education Malaysia, namely *Kurikulum Standard Sekolah Menengah* (KSSM) of Geography form 4 and 5 Secondary School, geography textbook form 4, and geography textbook form 5. The data were analysed by a qualitative method with a content analysis approach. All documents were analysed with a focus on disaster risk reduction materials, based on the Sendai framework. As a result, the geography education curriculum for secondary schools in Malaysia has included these types of natural disasters: earthquakes, tsunamis, floods, landslides, droughts, hurricanes, and volcanoes. It also includes four elements of priority action for disaster risk reduction, albeit with an uneven composition. Overall, this study has shown that elements of Disaster Risk Reduction (DRR) were included in the geography education curriculum for secondary schools in Malaysia.

**Keywords:** natural disaster; disaster risk reduction; geography education; Malaysia; Sendai framework



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## 1. Introduction

In recent years, there has been an increase in natural disasters worldwide. These natural disasters include geophysical, meteorological, hydrological, and climatological events [1]. In Malaysia, natural disasters such as earthquakes, landslides, floods, and droughts are reported to have occurred in several areas [2]. These disasters caused various impacts and damages to environmental, social, and economic conditions. For example, a landslide is a natural hazard and dangerous event that may lead to property damage and injuries [3]. Even so, disaster risk assessments for the vulnerability of community social

conditions still receive less attention [4]. Therefore, more attention needs to be paid to disaster risk reduction, especially in the field of education.

Knowledge, understanding, and applications are effective ways to prevent disasters and reduce their effects [5–7]. A study by [8] stated that landslide risk could not be eliminated entirely but could be minimised by mastering systems and technology. Previous studies have shown that disaster education can reduce vulnerability and various risks, such as injury and damage, when a disaster occurs [7]. Formal education can also improve disaster preparedness and minimise the risk of or vulnerability to catastrophe [9].

Studies of the relationship between geography and disaster education have developed, starting from the concept of disaster in geography education [10], and disaster risk reduction education [11–15], to the study of the disaster risk reduction (DRR) curriculum in geography [16]. A previous study by [17] stated that geography education in Indonesia contained topics about disasters as an element of environmental sustainability. Another study also mentioned that there are two main concepts of disasters in geography education; namely, natural disasters and human disasters [10]. These two types of disasters require special attention so that students have an awareness of the existing risks and have preventive and risk-reduction measures for these disasters. Relating to disaster mitigation education, Refs. [12,13] stated that students' awareness of the occurrence of natural disasters in their environment is moderate and needs attention from an early age. A pedagogical tool such as a Sendai framework for disaster reduction is needed in order to improve knowledge of natural hazards and overcome this [15]. DRR education can be provided as a stand-alone subject of its own or can be integrated with other subjects, such as geography, when delivered in schools [16].

Studies on DRR education have been carried out in Malaysia and other countries. Studies about DRR in Malaysia have focused on the opportunities and challenges of implementing DRR education in schools [18], government and non-government mechanisms and responses in carrying out DRR [19], and the use of DRR modules at the early age education level [20]. However, studies focusing on analysing DRR education in the geography curriculum based on the Sendai framework are still limited and need to be completed. This study seeks to complement the existing research by analysing the curriculum of geography education in Malaysia. This study specifically aims to investigate the types of natural disasters taught and analyse Disaster Risk Reduction Education based on the Sendai framework in the geography curriculum in Malaysia for forms 4 and 5 of the National Secondary School, called *Sekolah Menengah Kebangsaan* (SMK).

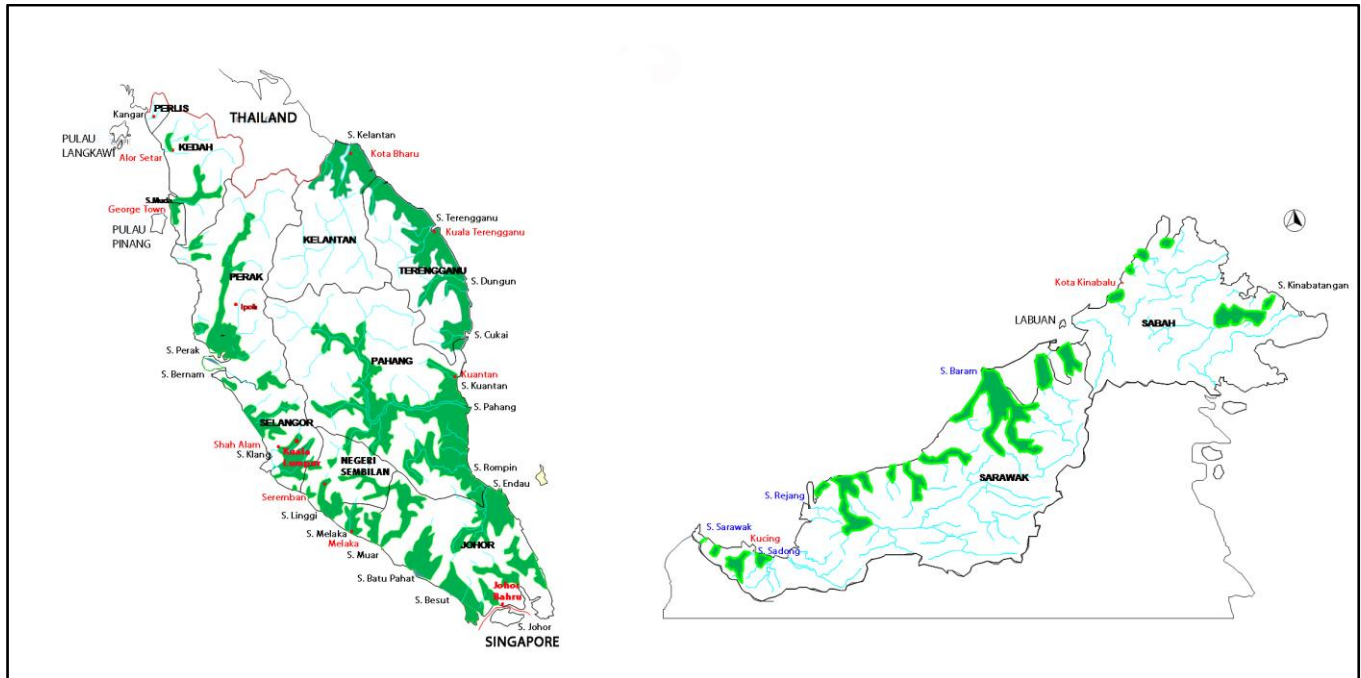
This study is based on the argument that the geography curriculum in Malaysia already contains DRR education but is not yet complete because it needs more materials to aid understanding rather than only application and actions. Syllabuses and textbooks for forms 4 and 5 in secondary schools already contained the types of natural disasters that occur as a provision of knowledge for students. In addition, there is also an element of priority action to support DRR education in the geography education curriculum in Malaysia. This study can help identify the DRR positions based on the Sendai framework in the geography education curriculum. Thus, the development of geography education can run optimally, especially to support DRR education.

## 2. Literature Review

### 2.1. Geography and Disaster Risk Reduction

Various types of natural disasters often occur in Malaysia. Although natural disasters of a geological nature, such as plate tectonic movements or earthquakes, were not common, there were frequent disasters arising from floods, landslides, droughts, storms, and cyclones [21–23]. From the beginning to mid-2022, floods occurred in various regions in Malaysia [24]. In early January, catastrophic flooding occurred in most areas of the peninsula, including Kuala Lumpur, Selangor, Johor, Melaka, and beyond. From February to July, floods also occurred in Kelantan, Terengganu, Kuala Lumpur, and Kedah (see Figure 1). In addition to floods, landslides are another type of disaster that often occur

in Malaysia [25]. A total of 121 landslides were reported to occur during the northeast monsoon in 2021–2022 [26] and are at risk of increasing continuously in the future due to urbanization, as well as social and environmental vulnerability [27].



**Figure 1.** Flood Prone Area in Malaysia [28].

The occurrence of these disasters has an impact on demographic, economic, social, and environmental changes. These impacts can even last for a long time due to the loss of jobs and livelihoods in the community, the loss of assets and infrastructure, and the great need for recovery and reconstruction [22,29,30]. Therefore, this situation requires attention and handling from all stakeholders, both in post-disaster policies as well as in risk reduction and disaster mitigation actions. Fortunately, there is a three-dimensional disciplinary system for disaster risk science research, namely disaster science, disaster technology, and disaster governance [31]. Disaster science can be related to knowledge and understanding of various hazards and their potential for occurrence in human life. Meanwhile, disaster technology can be linked to technology in disaster management, for example, using the internet for things and blockchains in disaster preparedness, warning, emergency relief, rehabilitation, and reconstruction [32,33]. Meanwhile, disaster governance can be related to stakeholders' policies pre- or post-disaster in an area.

Forms of attention and action can be focused on the education sector, among others. This is because education plays an essential role in developing the human capacity to face and solve various issues, including disaster risk reduction [34]. The study of the relationship between education and disaster risk reduction has also developed from the study of knowledge and attitudes toward disaster mitigation [11,12], student awareness about disasters [13], and learning methods of disaster risk reduction [14].

The result of a previous study [11] stated that most students in Malaysia already have basic knowledge about landslides. However, efforts and actions are still needed to increase awareness, attitudes, and skills in reducing risks [11,35]. In line with the study results, the authors of [12] also stated that high school students in Padang, Indonesia, do not yet have good awareness and attitudes related to disaster risk mitigation and actions. Likewise, in higher education students, although most already have sufficient knowledge and awareness of the occurrence of disasters, some still do not understand and need to receive training or education related to disasters [13]. Another study also showed that most

of the students in the lower level, namely primary schools in Indonesia, have a low-to-medium range of knowledge regarding disaster risk reduction [36]. Therefore, appropriate learning methods need to be able to encourage the improvement of disaster mitigation education in formal schools. In addition, integrating disaster risk reduction education into lessons in schools is also expected to increase student awareness regarding disasters.

Geography is one of the appropriate subjects to teach disasters and risk reduction actions. This is because geography aims to study humans and their environment, how humans affect the environment, or vice versa, and how the environment affects human survival [37–39]. Geography is also referred to as a carrier subject to integrate disaster risk reduction learning into the national curriculum in China [16]. Another study also mentioned that guided behaviour and actions related to disaster risk reduction are essential competencies that must be present in geography education for a basic understanding of the subject matter [10]. However, studies about DRR education in Malaysia did not focus much on the geography curriculum. Therefore, this study should fill the gap in research by examining and analysing the element of DRR in the geography curriculum in Malaysia.

## 2.2. Sendai Framework for Disaster Risk Reduction

The Sendai framework is an instrument issued by the United Nations through a world conference for disaster risk reduction [40]. The conference was held in Sendai, Miyagi, Japan, from 14–18 March 2015. This framework supports increased cooperation and collaboration between countries around the world in disaster risk reduction, climate change, and sustainable development [31]. The Sendai framework includes four priorities to reduce disaster risks, namely: (1) understanding disaster risk, (2) strengthening disaster risk governance to manage disaster risk, (3) investing in disaster risk reduction for resilience, and (4) enhancing disaster preparedness for effective response and to Build Back Better in recovery, rehabilitation, and reconstruction.

Studies of the Sendai framework for disaster risk reduction have developed from the reflections and assessments of its role as a reference for disaster risk reduction modules in higher education [15,41,42]. Since it was officially published in 2015, the Sendai framework has been used as a reference by hundreds of countries in formulating national disaster risk reduction strategies and policies. More than 100 countries report having national programs aligned with the Sendai framework in disaster risk reduction [41]. The Sendai framework is also used as a basis for establishing and implementing the module on natural hazards in higher education [15]. Even so, this framework is mostly applied by developed countries only; policymakers and stakeholders in other countries need to adjust their strategies to implement the Sendai framework [42]. Thus, it is hoped that the action priorities of the Sendai framework for disaster risk reduction can be applied more broadly and evenly.

## 3. Materials and Methods

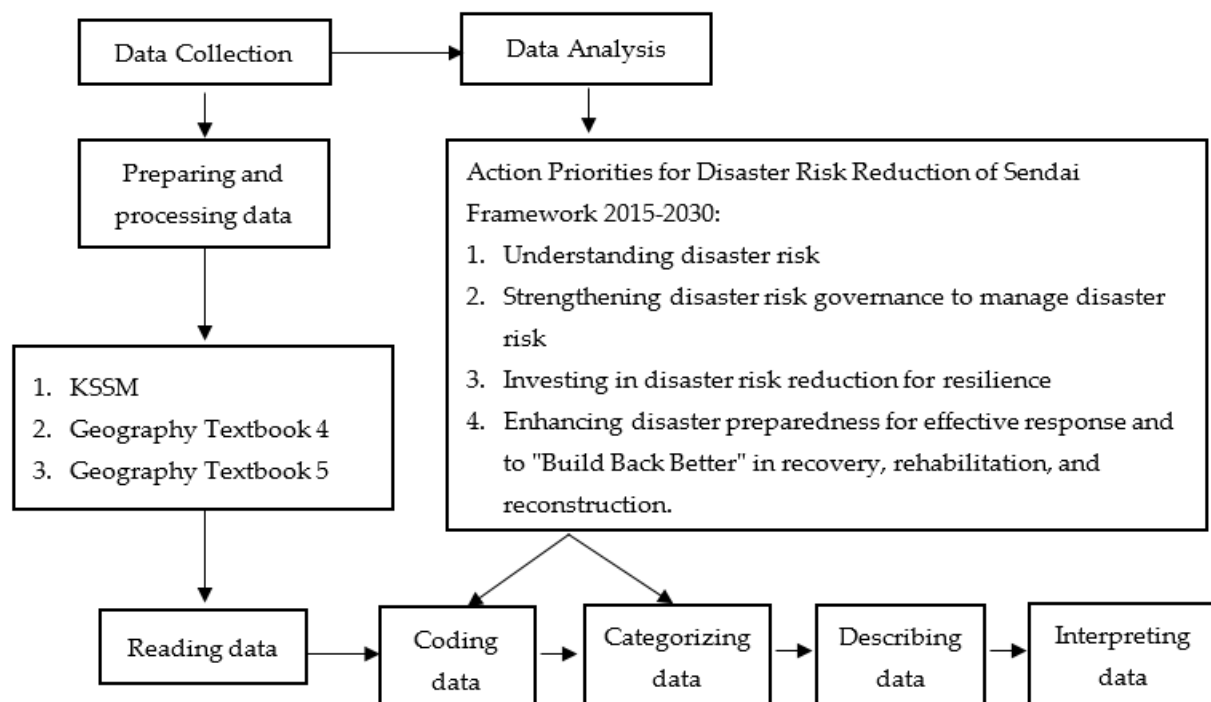
This study used the qualitative method with a content analysis approach. Through content analysis, the researchers can improve data understanding and testing of theoretical issues [43]. The steps to content analysis are: preparing and processing data, reading data to get in-depth knowledge, giving code to the sentences or paragraphs in the data, categorising data, describing and restating data, and interpreting data [44]. Specifically, the method in this study refers to the study [16] but uses a different framework, namely the Sendai framework for disaster risk reduction.

Data collection was carried out through document analysis. The data in the form documents in this study were obtained from the Malaysian Ministry of Education. There are three documents analysed, namely the *Kurikulum Standard Sekolah Menengah* (KSSM)/Malaysia's National Secondary School Curriculum of Geography forms 4 and 5 [45], the textbook of geography form 4 [46], and the textbook of geography form 5 [47]. All documents were analysed with a focus on disaster risk reduction educational materials. The other unrelated materials have been ignored.

Data analysis was started to identify the topics of disaster risk reduction based on the Sendai framework for Disaster Risk Reduction 2015–2030 [40]. Four priority actions in the framework are used as a reference for coding (Table 1). Then, the coding process was performed manually by using Atlas.Ti 9 software. The sentences in the document that contain priority actions in the Sendai framework were coded. The codes obtained were used as the basis for categorisation and classification. Furthermore, data were interpreted and related to the previous studies. In summary, Figure 2 shows the methodology used in this study.

**Table 1.** Priorities for Action of Disaster Risk Reduction from Sendai framework 2015–2030 [40].

Priorities	Actions
Priority 1	Understanding disaster risk
Priority 2	Strengthening disaster risk governance to manage disaster risk
Priority 3	Investing in disaster risk reduction for resilience
Priority 4	Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation, and reconstruction.



**Figure 2.** Methodology Used in This Study.

#### 4. Results

The results of the study showed that geography education in secondary schools in Malaysia contains material on the types of disasters and education on reducing the risk of such disasters. Here is an explanation of each topic.

##### 4.1. Types of Natural Disasters, Adapted from [6]

The geography education curriculum in Malaysia was divided into three main focuses: geography proficiency, physical geography, and human geography. The topic that explains the types of natural disasters was contained in the physical geography section, which is a theme that explains natural phenomena that occur on earth [45]. Table 2 shows the types of natural disasters in the geography education curriculum.

Table 2 showed seven kinds of natural disasters mentioned in the geography KSSM [45]; namely, earthquakes, tsunamis, landslides, volcanoes, floods, droughts, and hurricanes/

cyclones/typhoons. The seven types of natural disasters were scattered throughout the learning content in forms 4 and 5. In the content of the form 4 textbooks, there are four kinds of natural disasters: earthquakes, tsunamis, landslides, and volcanoes. Meanwhile, other natural disasters, namely floods, droughts, and hurricanes, are described in the form 5 textbooks.

**Table 2.** Type of Natural Disaster in Geography Education Curriculum.

Type of Natural Disaster	Documents		
	KSSM Geography Form 4 and 5 [45]	Form 4 Geography Textbook [46]	Form 5 Geography Textbook [47]
Earthquake	✓	✓	-
Tsunami	✓	✓	-
Landslide	✓	✓	-
Volcano	✓	✓	-
Flood	✓	-	✓
Drought	✓	-	✓
Hurricane/Cyclone/Typhoon	✓	-	✓

If the natural disasters are classified, the form 4 students in Malaysia learn about geological disasters; namely, earthquakes, tsunamis, landslides, and volcanoes. However, in form 5 of secondary school, they learn about floods, droughts, and hurricanes, which are classified as hydrological and climatological disasters. This is in accordance with the curriculum standards issued by the Ministry of Education Malaysia, where teaching physical geography starts from the topic of the lithosphere in form 4 and continues with the hydrosphere, atmosphere, and biosphere in form 5 of secondary school.

#### 4.2. Disaster Risk Reduction Education Based on the Sendai Framework 2015–2030 in Geography Curriculum in Malaysia

The syllabus documents and geography textbooks published by the Ministry of Education Malaysia were analysed based on the Sendai disaster reduction education framework. Analysis of the first priority action, namely, understanding disaster risk, obtained 15 themes (Table 3). This is the most themes obtained from all four priority actions available. These themes represent activities and ways of teaching students to understand disaster risks. In this element, it was found that the topic mentioned consists of various natural disasters, such as the occurrence of natural disasters, influencing factors, and their impact and influence.

**Table 3.** Understanding Disaster Risks.

Priority Action 1 of Sendai Framework	Themes	KSSM Geography Form 4 and 5	Form 4 Geography Textbook	Form 5 Geography Textbook
Understanding Disaster Risks	Explaining the layers of the earth and their movement	✓	✓	-
	Explaining the occurrence of earthquakes	✓	✓	-
	Explaining the occurrence of volcanic eruptions	✓	✓	-
	Explaining the occurrence of the tsunamis	✓	✓	-
	Understanding the impact of natural disasters on life	✓	✓	✓
	Mentioning various natural disasters	✓	✓	✓
	Mentioning examples of tsunamis in the world	✓	✓	-
	Mentioning examples of land collapses in Malaysia and the world	✓	✓	-
	Explaining the factors causing soil movement	✓	✓	-
	Understanding the concept of collapsed land	✓	✓	-
	Understanding the occurrence of floods	✓	-	✓
	Mentioning examples of floods in Malaysia	-	✓	✓
	Understanding climate-related phenomena	✓	-	✓
	Exemplifying the influence of weather and climate on human life	✓	-	✓
	Explaining the relationship between climate and the economic activity of people	✓	-	✓

The examples of sentences showing the first theme about the layer of the earth and their movement are:

“Explain with the examples of earth shape and location of tectonic plates’ movement” [45] (p. 27).

“The process of plate movement is divided into plate collision and plate separation. Plate collision occurs when two plates crash due to compression forces. In contrast, plate separation occurs when two plates move away from each other due to tensile forces” [46] (p. 65).

The following themes about the examples of flood occurrences in Malaysia were mentioned:

“An example of the mud flood on Jalan Seremban-Kuala Pilah in April 2018 caused severe traffic congestion” [46] (p. 109).

“The east coast states of Peninsular Malaysia, such as Kelantan, Terengganu, and Pahang are often hit by floods because these areas are exposed and affected by the North East Monsoon winds” [47] (p. 45).

In addition, the other themes about various natural disasters were found in all documents; namely, volcanic eruptions, earthquakes, tsunamis [45,46] (p. 27, p. 166), tornadoes, hurricanes, and storms [47] (p. 38).

The following priority action regarding disaster risk reduction in the Sendai framework is strengthening disaster risk governance to manage disaster risk. In this action, two themes were obtained, namely those related to policy and the role of the government in disaster events (Table 4). The first theme about government policy in landslide disaster risk reduction was stated in the form 4 geography textbook, namely:

**Table 4.** Strengthening Disaster Risk Governance to Manage Disaster Risk.

Priority Action 2 of Sendai Framework	Themes	KSSM Geography Form 4 and 5	Form 4 Geography Textbook	Form 5 Geography Textbook
Strengthening Disaster Risk Governance to Manage Disaster Risk	Understanding government policy for landslide disaster risk reduction	-	✓	-
	Understand the role of the government in realising disaster risk reduction	-	✓	✓

“The government carries out law enforcement to reduce the occurrence of mass movements” [46] (p. 111).

In addition, the government’s roles in realizing disaster risk reduction were also found in both documents [46,47]. The sentences which reflected this theme are:

“MET is an agency under the Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC) which is responsible for supplying a variety of meteorological, climate, and geophysical services to meet the country’s needs in meteorological, climate, and geophysical services for well-being, security and sustainable development” [46] (p. 70).

“National Disaster Management Agency (NADMA) plays a role in managing disasters through coordinating the enforcement agencies involved, aid channels, and evacuation places for flood victims.” [47] (p. 60).

The third priority action contained in the Sendai Framework is investing in disaster risk reduction for resilience. In this action, five themes were obtained (Table 5). The themes in this part indicate community participation and stakeholders with increasing resilience during a disaster. One of the themes in this priority action is the use of technology as a disaster risk reduction measure, as mentioned in the form 4 geography textbook,

**Table 5.** Investing in Disaster Risk Reduction for Resilience.

Priority Action 3 of Sendai Framework	Themes	KSSM Geography Form 4 and 5	Form 4 Geography Textbook	Form 5 Geography Textbook
Investing in Disaster Risk Reduction for Resilience	Describe community participation in disaster risk reduction	✓	✓	-
	Providing ideas for preventing and reducing climate change	✓	-	✓
	Know examples of buildings resilience as part of disaster management	-	✓	-
	Knowing the use of technology as a disaster risk reduction step	-	✓	✓
	Understand the cooperation of the government and the community in preparation for natural disasters	-	✓	✓

“The use of earthquake-proof technology can help reduce the risk of buildings collapse and severe damage...” [46] (p. 71).

Additionally, the form 5 geography textbook,

“Using remote sensing technology in detecting and predicting disasters.” [47] (p. 56).

The fourth priority action based on the Sendai framework is enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation, and reconstruction. The second most number of themes were obtained in this action; namely, nine themes (Table 6). Most of the findings in this theme relate to the form of preparedness and mitigation to face some natural disasters. For example, efforts to design supplies in facing disasters caused by weather and climate phenomena were mentioned in the learning syllabus [45] (p. 43), which is explained with efforts to prepare for drought and typhoons in the form 5 geography textbook [47] (p. 51). In addition, the form 4 geography textbook also contained some actions, such as an idea to reduce the landslide disaster risk, namely by planting vegetation to cover hills, using the terracing method in agriculture, and increasing public awareness of the environment [46] (p. 111).

**Table 6.** Enhancing Disaster Preparedness for Effective Response and to “Build Back Better” in Recovery, Rehabilitation, and Reconstruction.

Priority Action 4 of Sendai Framework	Themes	KSSM Geography Form 4 and 5	Form 4 Geography Textbook	Form 5 Geography Textbook
Enhancing Disaster Preparedness for Effective Response and to “Build Back Better” in Recovery, Rehabilitation, and Reconstruction	Designing disaster mitigation	✓	✓	✓
	Discussing some actions of landslide disaster reduction	✓	✓	-
	Encourage students to have ideas related to the positive impact of disasters	-	✓	-
	Explain responses to disaster reduction	✓	✓	✓
	Explaining preparations for the droughts	-	-	✓
	Explaining steps to reduce a typhoon’s impact	-	-	✓
	Giving idea for landslide disaster reduction	✓	✓	-
	Knowing some actions of flood mitigation	-	-	✓
	Understanding responses to natural disasters	✓	-	✓

## 5. Discussion

In summary, the findings show that the mid-level geography curriculum in Malaysia contained material on the types of natural disasters and priority action elements of disaster risk reduction education based on the Sendai framework. The types of natural disasters mentioned were earthquakes, tsunamis, floods, landslides, droughts, hurricanes, and volcanoes. Meanwhile, the priority action elements mentioned sequentially from the highest priority are: 1 (understanding disaster risk), 4 (enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation, and reconstruction), 3 (investing in disaster risk reduction for resilience), and 2 (strengthening disaster risk governance to manage disaster risk).

The various natural disasters mentioned in the geography education curriculum in Malaysia were quite contextual to conditions in Malaysia which often experience natural disasters [22,48,49]. Among the natural disasters that are widely reported are floods, landslides, droughts, and earthquakes [22,23,50]. This result was more complete when compared to the DRR contained in the subject of Earth and Geography in Cambodia, which includes floods, droughts, tsunamis, and deforestation only [51]. However, natural disasters that occurred in Malaysia, such as hurricanes and wildfires [21], had not been widely mentioned and studied in syllabuses and geography textbooks. This may be due to disasters such as wildfires being included in disasters caused by human activity or natural phenomena [52].

Meanwhile, this study found that priority action elements had been mentioned in the geography education curriculum in Malaysia using the Sendai framework. However, they are uneven and tend to be limited to aspects of understanding and knowledge. These findings confirm previous studies that stated that DRR topics in textbooks and geography education classes still tend to be limited in terms of scope, differentiation, and depth [10]. The limitations in the results of this study are shown by a large number of action elements for theme 1 when compared to the other action elements. This action element is closely related to the knowledge aspect of disaster risk reduction education. Studies in China [16] also show that the composition of the material in geography education from the curriculum from 1986 to 2003 is mostly concerned with the dimension of knowledge. However, for the 2017 high school curriculum, there are more elements of action than other elements, such as knowledge, response, participation, and integration.

So far, the results of the previous study show the development of DRR in geography education, namely from the dominance of the knowledge dimension to the action dimension to improve disaster preparedness [10,16]. Interesting teaching materials such as pop-up book media [53] and learning methods such as outdoor learning that can improve a deep understanding of disasters [39,54,55] are designed to improve knowledge and student skills related to disasters [14]. Although the results of this study also tend to follow these developments, the material presented is still dominated by knowledge, while the dimension concerns developing an understanding of the science and mechanisms of natural hazards. Meanwhile, the form of action and participation in disaster risk reduction in geography lessons at the secondary level is still minimal. Action is a dimension that encourages learners to act and be proactive in mitigating risk [56]. In the Sendai framework, this is reflected in the fourth priority action, with less code than the first priority action. Meanwhile, participation is a dimension that engages learners in processes of resilience building in their own community through grassroots-level initiatives, identifying hazards, developing resilience action plans, and implementing those plans [56]. The involvement of government and non-government organisations is very important in handling disaster problems in an area [57]. This dimension is contained in the second and third priority actions in the Sendai framework, where the amount of code is less than the first priority action, which is related to knowledge. Whereas, one of the cities in Malaysia, namely Melaka, has provided an example of participation and cooperation between the government and the community in climate mitigation [58]. Materials such as this should be added to the curriculum to enrich students’ insight. Therefore, the topics and content in the syllabus

and textbooks need to be bolstered with material on actions and participation in DRR so that priority actions are balanced as a whole.

These findings may be due to changes in government policy in the development of the geography curriculum in Malaysia. Geography became a compulsory lesson in low-level schools, but was turned into an elective lesson at the secondary level. Consequently, geography lessons can only be taken by students specializing in human sciences. Moreover, since 2000, geography is also no longer a requirement for graduation, so this lesson position is increasingly marginalised and has little interest. In addition, the factors of insufficient quantity and quality of geography teachers are also factors that cause geography to be underdeveloped. These reasons make the development of the geography curriculum in Malaysia, including disaster risk reduction education, less than optimal [59].

Based on the findings and conditions that show the marginalisation of geography at the secondary level, it is necessary to have an institutional responsibility to return geography to become compulsory lessons. As a mandatory lesson, the development of the geography curriculum will run comprehensively, including by adding implementation in the realm of actions and participation in DRR. It is necessary because, currently, acquiring knowledge and its application in the field of action is considered the only effective way to prevent disasters or reduce their impact [7]. While there is no DRR education as a stand-alone subject in schools, geography is the most relevant subject that students need to recognize things that happened before and after a disaster [12]. It is mitigation to prevent and reduce the impact of disasters, increase preparedness for responses and recovery, and strengthen resilience according to the goals of the Sendai framework.

## 6. Conclusions

Overall, the geography education curriculum at the secondary school level in Malaysia already contains disaster risk reduction education. This content includes various natural disasters that occur in Malaysia and the world. In addition, there is also an element of priority action in the DRR in accordance with the Sendai framework. However, this study has the limitation of only examining geography education at the secondary school level in Malaysia. Studies at the school level and other subjects in other countries are also needed to improve disaster risk reduction education in schools. Therefore, this study encourages further studies to examine the element of DRR in different subjects in Malaysia or geography in other countries. This research also provides recommendations for geography teachers and education practitioners to pay more attention to the implementation of education for disaster mitigation, both related to knowledge as well as action and skills. Recommendations were also given to policymakers, especially the Malaysian Ministry of Education, to return geography to become a compulsory lesson and develop its comprehensive curriculum for disaster risk reduction education.

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