ABSTRACT

Indonesia is a country that located between four active plates, the Eurasian, Indo-Australian, Pacific, and the Philippines. Those plates have made Indonesia as one of the most common countries with natural disasters. Floods have been a disaster with the highest percentage in Indonesia. Flood events are difficult to be prevented, but its impact can be controlled and reduced. In general, Indonesian society lack of knowledge of disaster, so when natural disasters occurred, people tend to not well-prepared and don’t understand about steps that have to do. Moreover, the number of victims is still relatively children and due to lack of socialization about disaster mitigation over children. This study based on the observation and questionnaires to determine the need for the Indonesian people about the disaster mitigation as early as possible. Flood frequently becomes a disaster and problem every single year. The problem faced is the responsibility of all elements. Besides caused by nature, floods also occurred due to human reckless to the environment. The negative impact of floods become larger due to lack of public understanding of the disaster mitigation. It occurs primarily among children, they often become the main victims of the flood disaster. Therefore, the Indonesian children should be instilled early on disaster awareness, the provision of understanding of disaster mitigation is possible to do through the education.

Keywords: hazard mitigation, floods, children, education

1. Introduction

Indonesia is a country located between the four active plates of the world, the Eurasian, Indo-Australian, Pacific, and Philippine plates make Indonesia one of the countries prone to natural disasters (geological hazard), such as floods, earthquakes, and landslides (see figure 1).

Flooding became a disaster with the highest percentage in Indonesia (see figure 1). Flooding is a terrain occurrence due to increased water volume. Flood is a natural occurrence that can occur because it is caused by nature or caused by human activities. Flood disasters are natural events that can occur at any time and can result in loss of life and property (see figure 3). Flood events can not be prevented but can be controlled and mitigated the impact of losses caused. However, the loss of life and loss is the result of the community's ignorance of disaster mitigation. People do not understand the steps to be taken in the event of a flood, so that the negative impacts of this disaster can be minimized but in fact quite the opposite.

Indonesian people are generally minimal knowledge of disaster, so when natural disasters occur people tend not ready and do not understand what steps should be done. In addition, the number of victims who are still classified as children is also caused by the lack of socialization on disaster mitigation in children. Therefore, it is expected that the Indonesian people early on may gain knowledge on disaster mitigation, because Indonesia is a disaster subscriber country so that Indonesian people can act as early as possible.

2. Literature Study

2.1 Disaster
Based on Law No. 24 of 2007 on Disaster Management, the definition of disaster is an event or series of events that threaten and disrupt the lives and livelihoods of the community caused by both natural factors and/or non-internal factors and human factors resulting in the occurrence of human lives, damage to the environment, property loss, and psychological impact. While natural disasters are disasters caused by events or series of events caused by nature such as earthquakes, tsunamis, volcanoes, floods, droughts, hurricanes, and landslides.

### 2.2 Flood

Based on Law No. 24 of 2007, a flood is a natural occurrence that can occur at any time and often result in loss of life, property, and objects. Because the arrival is relatively fast, to reduce the losses caused by the disaster needs to be prepared quickly, accurately, and integrated handling.

### 2.3 Mitigation

According to Law No. 24 of 2007, said that the definition of mitigation can be defined. Understanding mitigation is a series of efforts to reduce disaster risks, both through physical development and awareness and enhancement of the ability to deal with disaster threats.

### 2.4 Education

Basically, the definition of education according to Law No. 20 of 2003 on National Education System is a conscious and planned effort to create an atmosphere of learning and learning process so that learners actively develop their potential to have spiritual power of religion, self-control, personality, intelligence, noble character, as well as the skills that he and the community need.

### 2.5 Child

According to The Minimum Age Convention Number 138 of 1973, a child is a person aged 15 years and under. On the contrary, in the 1989 Convention on The Right of the Child ratified by the Indonesian government through Presidential Decree No. 39/1990, it was stated that children are those aged 18 and under. UNICEF defines children as people between 0 and 18 years of age.

### 2.6 Early Childhood

Early childhood is a child who is at the age of 0-8 years. According to Beichler and Snowman (Dwi Yulianti, 2010: 7), early childhood is a child aged between 3-6 years. While the nature of early childhood (Augusta, 2012) is a unique individual in which he has growth patterns and developments in aspects of physical, cognitive, socioemotional, creativity, language, and communication that are specific to the stage that is being passed by the child. From various definitions, researchers conclude that early childhood is a child aged 0-8 years who are in the stage of growth and development, both physical and mental.

### 3. Methodology

#### 3.1 Type of Research

This research is an observation research and questionnaire to know the need of Indonesian people to get an understanding of disaster mitigation early on.

#### 3.2 Object of Research

The general public of various classes and ages. Where the people who fill this questionnaire had seen and experienced the incident of flooding directly. Communities are scattered from various regions such as Jepara, Kudus, Pati, Semarang, and other cities in Indonesia which are often hit by floods.

#### 3.3 Location and Time of Research

The study was conducted online from June 15, 2016 to July 1, 2016.
3.4 Sampling Technique
The technique used in sampling is done by giving an online and random questionnaire.

3.5 Sample Quantity
Questionnaires were given to the community of 120 questionnaires.

3.6 Research Instruments
Providing questionnaires to the general public related to floods, mitigation, and control efforts, one of which is asking about the importance of early disaster mitigation education (attached questionnaire).

3.7 Flow Chart (Figure 5)

4. Analysis and Synthesis
From the questionnaire obtained data (see table 1) with the analysis as follows:

a. Question 1: What is your age when filling out the questioner? Gained results:
   - Answer A (6 - 12 years) was recorded as 0%
   - Answer B (13 - 20 years) accounted for 75%
   - Answer C (21 - 30 years) accounted for 24.2%
   - Answer D (above 30 years) recorded as much as 0.98%

b. Question 2: Surrounded by 4 active plates of the world causes Indonesia to be prone to geological disasters (natural disasters)? Gained results:
   - Answer A (Agree) recorded as much as 97.5%
   - Answer B (Disagree) was 2.5%

c. Question 3: Which natural disasters are every year most common in Indonesia?
   Gained results:
   - Answer A (Flood) recorded as much as 75%
   - Answer B (Landslide) was recorded at 9.2%
   - Answer C (Earthquake) recorded as much as 15.8%
   - Answer D (Other) recorded as much as 0%

d. Question 4: Floods become one of the calamities that cause problems every year?
   Gained results:
   - Answer A (Agree) recorded as much as 97.5%
   - Answer B (Disagree) was 2.5%

e. Question 5: Is the issue other than the responsibility of the community as well as the government? Gained results:
   - Answer A (Yes) was recorded as much as 99.2%
   - Answer B (No) was recorded at 0.8%

f. Question 6: In addition to causing casualties of flood disaster also caused many public facilities to be damaged? Gained results:
   - Answer A (Agree) was recorded as much as 98.3%
   - Answer B (Disagree) was recorded at 1.7%

g. Question 7: Unclean floods occur due to nature but also the attitude of humans who are less concerned about the environment? Gained results:
   - Answer A (Agree) recorded as much as 100%
   - Answer B (Disagree) recorded as much as 0%

h. Question 8: In addition, the negative impact of the flood disaster becomes greater because it is less likely that the community will mitigate the disaster? Gained results:
   - Answer A (Agree) was recorded as much as 98.3%
   - Answer B (Disagree) was recorded at 1.7%

i. Question 9: Children are often the main victims in every flood disaster because of their ignorance of disaster mitigation? Gained Result:
Answer A (Yes) was recorded at 92.5%
Answer B (No) recorded as much as 7.5%

j. Question 10: Do you think the cultivation of a disaster-conscious culture should be done as early as possible? Gained results:
Answer A (Yes) recorded as much as 100%
Answer B (No) recorded as much as 0%

k. Question 11: The cultivation of such disaster mitigation can be provided through the education channel? Gained results:
Answer A (Agree) recorded as much as 97.5%
Answer B (Disagree) was 2.5%

l. Question 12: What school level do you think is appropriate for the provision of disaster mitigation education to students? Gained results:
Answer A (PAUD) recorded as much as 10.8%
Answer B (TK) was recorded at 18.3%
Answers C (SD) accounted for 62.5%
Answers D (Other) accounted for 8.3%

m. Question 13: How confident are you that early disaster mitigation education will work and have a positive impact on any disaster mitigation efforts?
Answer A (Very Sure) was 49.2%
Answer B (Yakin) was recorded at 46.7%
Answer C (Indifferent) was recorded at 2.5%
Answer D (Not Sure) was recorded at 1.7%

5. Results and Discussion

5.1 Results

Based on questionnaire data, it is found that Indonesia is a country prone to natural disasters because it is surrounded by four active plates of the world, as much as 97.5% (see graph 1). One of these natural disasters that have high intensity is flood disaster, as much as 75% (see graph 2). Even floods are disastrous every year, as much as 97.5% (see graph 3). The public recognizes that the problem is not only their responsibility but also the government, as much as 99.2% (see graph 4). Floods have claimed many lives, damaging public facilities, as much as 98.3% (see graph 5). The public also realizes that flooding is not entirely natural because of the attitude of humans who do not care about the environment, as much as 100% (see graph 6). The negative impacts of flooding are becoming more severe as people are less aware of disaster mitigation, as much as 98.3% (see graph 7). Children are often the main victims of floods as well as their ignorance of disaster mitigation, as much as 92.5% (see graph 8). The lack of knowledge on mitigation is due to the inclusion of early disaster mitigation, so the community considers that the cultivation of a disaster-conscious culture should be done as early as possible, as much as 100% (see graph 9). Disaster mitigation cultivation is one of them can be provided through education, as much as 97.5% (see graph 10). The primary education level is considered suitable for disaster mitigation education, as many as 62.5% (see graph 11). The community is very confident that early disaster mitigation will be successful and have a positive impact, as much as 49.2% (see graph 12). Therefore, given the cultivation / education of disaster mitigation early on will have benefits for the short and long term in hopes to anticipate the negative impact of the occurrence of flood disaster in the future.

5.2 Discussion

Based on the results of the questionnaire that we have spread online with the respondents of the general public with various circles and ages, that the community
realizes the need for cultivation / education of disaster mitigation (flood) in children from an early age, considering Indonesia is a country located between the meetings of four active plates of the world causing Indonesia to become a country prone to natural disasters. Flooding becomes a disaster that happens quite often and becomes a problem every year. The problems faced by all elements of society and government, because not only claimed casualties, but also caused the destruction of various facilities such as schools, offices, roads, and others. So of course when a flood disaster will hamper the learning process of students, hampering the economy of society, also the distribution of logistics. Besides caused by nature, floods also occur due to human attitude that does not care about the environment. The negative impact of floods is greater due to the understanding of the people who are less likely to mitigate the disaster. It happens mainly among children so often they become the main victims in the flood disaster. Therefore it should be if the children of Indonesia implanted early disaster awareness culture in which the planting of disaster mitigation can be done through education. The primary level is considered by respondents as the right level for disaster mitigation education. This is because elementary school children can be given enough direction to simulation or practice when the flood disaster occurs. Indonesian people are very convinced that disaster mitigation education given early will be successful and have a positive impact, so that the future of the Indonesian people are aware and respond to disaster. Based on these results inspire us to make a breakthrough where indeed the children of Indonesia should have been given the education of disaster mitigation early on. We create a learning model for those named "AKSIANA", AKSIANA is an abbreviation of Child Disaster Preparedness or the Indonesian language is Anak Siaga Bencana, in the hope that the inclusion of disaster mitigation education as early as possible can have a positive impact on children and the general public in Short and long term. The Learning Model of AKSIANA refers to 3 aspects of disaster mitigation, namely: Pre Disaster, Disaster, and Post Disaster (see figure 4).

AKSIANA stands for Anak Siaga Bencana (Child Disaster Preparedness). AKSIANA is implemented by giving dissemination and training of disaster mitigation on primary school children directly, it can not be denied that children have a strong enough memory and training such as mitigation of this disaster will be better if done early, so the children Indonesia already has a foundation in the face of natural disasters (floods). It is certainly in the hope that will be carried to adulthood even at old age, so that the Indonesian people will be skilled in terms of overcoming natural disasters that exist both in the short and long term.

Considering the target of this program is children, then of course the way in delivering this disaster mitigation training should be easy to understand and digest and not boring, the training of this landslide mitigation disaster with 3 subjects namely: Pre Flood, Flooding, and Post-Flood.

5.2.1 Pre Flood
• Flood recognition and flood training
• Familiarize yourself with activities that can reduce the risk of flooding
• Planting trees, forming evacuation routes in case of flooding
• Establish a flood warning system
• Supporting government efforts in tackling floods
• Keeping water catchment areas and so on
• etc

5.2.2 Flooding
• Save the soul by following established procedures
• Monitor the water level
• listen to emergency information about floods
• actively involved in evacuation sites
• etc

5.2.3 Post Flood
• Cleaning the house and surrounding environment
• Involved in the provision of assistance
• Follow the procedures of the authorities
• etc

As a student of course AKSIANA program can be applied directly to the community as a form of community service, but it can also be implemented by students in the implementation of KKN (Kuliah Kerja Nyata), and of course this can be a government reference to include AKSIANA into the Primary School education curriculum.

To establish a disaster prepared child requires the cooperation of all parties, both parents, community, and government (see figure 5). In this case the parents as the nearest family must provide moral support to the child to always indifferent to the surrounding environment as well as to provide the spirit and motivation for the child to always be diligent learning disaster mitigation. The community can provide examples of efforts to prevent negative impacts of disasters in their environment, such as maintaining environmental hygiene, disposing of waste in place, not doing illegal logging, and so forth. And the government in this case can provide space and access such as incorporating disaster mitigation education into the primary school curriculum so that children will get the maximum, good, and structured teaching

6. Conclusions and Recommendations

6.1 Conclusions
• Based on a questionnaire that has been completed by 124 people online, it can be concluded that according to society, Indonesia is a country prone to natural disasters one of which is the flood. The negative impact of the flood is getting bigger due to the people's lack of understanding of flood disaster mitigation. And the absence of early planting makes the main victims in every disaster.
• The community wants the education of disaster mitigation (flood) from the very beginning (elementary school).
• AKSIANA became one of the learning models of disaster mitigation (flood) for children.
• AKSIANA is divided into three subject discussions, namely pre disaster, disaster, and post disaster.
• AKSIANA program can be applied by students directly as a dedication to the community.

6.2 Recommendations

The community should begin to care about the surrounding environment to prevent the impact of severe natural disasters. Society and government must synergize each other to cultivate to the young generation so generated the generation of disaster response. In addition, it is expected that the government can review for disaster mitigation education to be incorporated into the curriculum and become one of the subjects in school, considering that Indonesia is a country prone to natural disasters.
Acknowledgements
Thanks to the people of Indonesia who have been willing to take the time to fill the poll online. In addition, we also thank Ms. Anis Kurniasih, ST, MT who has guided us in writing this paper and all related parties that we can not mention one by one.

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BNPB. (2017). Data & Informasi Bencana Indonesia. (Online), (http://dibi.bnpb.go.id, Diakses pada 02 Februari 2017 pukul 20. 07 WIB)

![Figure 1. Indonesia Disaster Statistics 1815 - 2017 (Source: http://dibi.bnpb.go.id/)](http://dibi.bnpb.go.id/)
Figure 2. Disaster Statistics in Indonesia from 2017 to January (Source: [http://dibi.bnpb.go.id/](http://dibi.bnpb.go.id/))
Figure 3. Recapitulation of Disaster, Victim, and Impact incidents generated up to January 2017 (Source: http://dibi.bnpb.go.id/)

Figure 4. Aksiana Program
Figure 5. The relationship between family, community, and government in shaping the private children of disaster response.

Graph 1. Statement on respondent's age when filling out questionnaire / questionnaire.

Graph 2. The respondent's statement that it is located between the 4 active plates of the world makes Indonesia vulnerable to natural disasters.

Graph 3. Statement of respondents about natural disasters that every year often hit Indonesia.

Graph 4. Respondent's statement that flooding becomes one of the disasters that causes problems every year.
Graph 5. Respondent's statement that the flood problem is in addition to the responsibility of the community as well as the government.

Graph 6. Respondent's statement that in addition to causing casualties flood disaster also caused many public facilities damaged.

Graph 7. Statement of the respondent that the flood is not purely due to nature but also the attitude of humans who are less concerned about the environment.
**Graph 8.** Respondent's statement that the negative impact of the flood disaster becomes greater because it is less likely to understand the disaster mitigation community.

**Graph 9.** Respondent's statement that Children are often the main victims of the flood disaster due to ignorance of disaster mitigation.

**Graph 10.** Respondent's statement that the cultivation of a disaster-conscious culture should be done as early as possible.

**Graph 11.** Respondent's statement that the planting of disaster mitigation can be provided through the education channel.
Graph 12. Statement of respondents regarding the level of school suitable for the provision of disaster mitigation education.

Graph 13. Statement of respondents that the education of disaster mitigation from an early age will be successful and have a positive impact.

Tabel 1. Respondent Questionnaire Results

<table>
<thead>
<tr>
<th>No</th>
<th>Pernyataan</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Ket</th>
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</thead>
</table>
| 1. | Usia responden saat mengisi kuosioner/angket. | 0 | 90 | 29 | 1 | A. 6 – 12 tahun  
B. 13 – 20 tahun  
C. 21 – 30 tahun  
D. Diatas 30 tahun |
| 2. | Dikelilingi 4 lempeng aktif dunia menyebabkan Indonesia rawan bencana alam. | 11 | 7 | 3 |   | A. Setuju  
B. Tidak Setuju |
| 3. | Bencana alam yang setiap tahun sering melanda Indonesia. | 90 | 11 | 19 | 0 | A. Banjir  
B. Tanah Longsor  
C. Gempa Bumi  
D. Lainnya |
| 4. | Banjir menjadi salah satu bencana yang menjadikan permasalahan setiap tahunnya. | 11 | 7 | 3 |   | A. Setuju  
B. Tidak Setuju |
| 5. | Permasalahan banjir selain menjadi tanggung jawab masyarakat juga pemerintah. | 11 | 9 | 1 |   | A. Ya  
B. Tidak |
| 6. | Selain menyebabkan korban jiwa bencana banjir juga menyebabkan banyak fasilitas umum rusak. | 11 | 8 | 2 |   | A. Setuju  
B. Tidak Setuju |
| 7. | Banjir tidak murni terjadi akibat alam akan tetapi juga sikap manusianya yang kurang peduli lingkungan. | 12 | 0 | 0 |   | A. Setuju  
B. Tidak Setuju |
| 8. | Dampak negatif bencana banjir menjadi lebih besar karena kurang mengerti masyarakat akan mitigasi bencana. | 11 | 8 | 2 |   | A. Setuju  
B. Tidak Setuju |
| 9. | Anak-anak acapkali menjadi korban utama dalam setiap terjadinya bencana banjir karena ketidaktauhan mereka terhadap mitigasi bencana. | 11 | 1 | 9 |   | A. Ya  
B. Tidak |
| 10. | Penanaman budaya sadar bencana harus dilakukan sedini mungkin. | 12 | 0 | 0 |   | A. Ya  
B. Tidak |
| 11. | Penanaman akan mitigasi bencana dapat diberikan melalui jalur pendidikan. | 11 | 7 | 3 |   | A. Setuju  
B. Tidak Setuju |
   a. 6 – 12 tahun
   b. 13 – 20 tahun
   c. 21 – 30 tahun
   d. Diatas 30 tahun

   a. 59
   b. 56
   c. 3
   d. 2

{| Questionnaire: |
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<tbody>
<tr>
<td>1. Berapakah usia anda saat mengisi kuosioner ini?</td>
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<td>a. 6 – 12 tahun</td>
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<td>b. 13 – 20 tahun</td>
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<td>c. 21 – 30 tahun</td>
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<td>d. Diatas 30 tahun</td>
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<tr>
<td>2. Dikelilingi 4 lempeng aktif dunia menyebabkan Indonesia rawan akan bencana geologi (bencana alam).</td>
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<td>a. Setuju</td>
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<td>b. Tidak Setuju</td>
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<tr>
<td>3. Manakah bencana alam yang setiap tahun paling sering terjadi di Indonesia?</td>
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<tr>
<td>a. Banjir</td>
</tr>
<tr>
<td>b. Tanah Longsor</td>
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<td>c. Gempa Bumi</td>
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<td>d. Lainnya</td>
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<tr>
<td>4. Banjir menjadi salah satu bencana yang menjadikan permasalahan setiap tahunnya.</td>
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<td>b. Tidak Setuju</td>
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<td>5. Apakah permasalahan tersebut selain menjadi tanggung jawab masyarakat juga pemerintah?</td>
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<td>b. Tidak</td>
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<td>6. Selain menyebabkan korban jiwa bencana banjir juga menyebabkan banyak fasilitas umum rusak.</td>
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<td>7. Banjir tidak murni terjadi akibat alam akan tetapi juga sikap manusianya yang kurang peduli lingkungan.</td>
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<td>a. Setuju</td>
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<td>b. Tidak Setuju</td>
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<td>8. Selain itu dampak negatif bencana banjir menjadi lebih besar karena kurang mengertinya masyarakat akan mitigasi bencana.</td>
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<td>a. Setuju</td>
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<td>b. Tidak Setuju</td>
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<tr>
<td>9. Anak-anak acapkali menjadi korban utama dalam setiap terjadinya bencana banjir karena ketidaktahtuan mereka terhadap mitigasi bencana?</td>
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<td>a. Ya</td>
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<td>b. Tidak</td>
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<tr>
<td>10. Apakah menurut anda penanaman budaya sadar bencana harus dilakukan sedini mungkin?</td>
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<td>a. Ya</td>
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<td>b. Tidak</td>
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<tr>
<td>11. Penanaman akan mitigasi bencana tersebut dapat diberikan melalui jalur pendidikan?</td>
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<td>a. Setuju</td>
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<td>b. Tidak Setuju</td>
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<tr>
<td>12. Menurut anda jenjang sekolah manakah yang cocok untuk diberikannya pendidikan mitigasi bencana pada pelajar?</td>
</tr>
<tr>
<td>a. PAUD</td>
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<tr>
<td>b. SD</td>
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<tr>
<td>c. SMP</td>
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<tr>
<td>d. Lainnya</td>
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<tr>
<td>13. Seberapa yakin anda pendidikan mitigasi bencana sejak dini akan berhasil dan berdampak positif dalam setiap upaya mitigasi bencana?</td>
</tr>
<tr>
<td>a. Sangat Yakin</td>
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<tr>
<td>b. Yakin</td>
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<tr>
<td>c. Biasa saja</td>
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<tr>
<td>d. Tidak Yakin</td>
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