

## The Effects of “*Asal Kena*” Training on the Improvement of Disaster-Related Behaviours of Junior High School Students

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### Abstract

The number of children who are victims of disasters is always comparably higher than that of the other victims of disasters, not to mention the psychological disadvantages caused by the prolonged trauma, causing children's personal quality of life to decline to a worrisome level. School is the institution most unprepared for disasters, while in fact it is the most ideal place to inculcate, socialize, and train anticipation and reaction in disaster preparedness. Children are the group most vulnerable in disasters, as they have no adequate attitudes, knowledge, and skills related to disasters. This research aims to find the influence of the training of *Anak Sekolah Kenal Bencana* or Disaster Awareness for School-Age Children (Indonesian, ASAL KENA) on the improvement of behaviours (knowledge, skills, and attitudes) of the junior high school students in Banjaran Sub-District. It adopted qualitative approach with quasi-experimental method and randomised two-group pre-post-test (control group) design. The sample was taken with purposive random sampling technique. Respondents were divided into the intervention group and control group, with 107 people in each group, respectively. The analysis employed paired *t*-test for the dependent samples and *t*-test for the independent samples in the pre and post-tests. The findings suggest that the training of ASAL KENA had influences on the disaster-related knowledge, attitudes, and skills of the junior high school students in Banjaran.

**Keywords:** *Asal Kena* (Training of Disaster Awareness for School-Age Children), disaster, behaviours, junior high school students

### I. INTRODUCTION

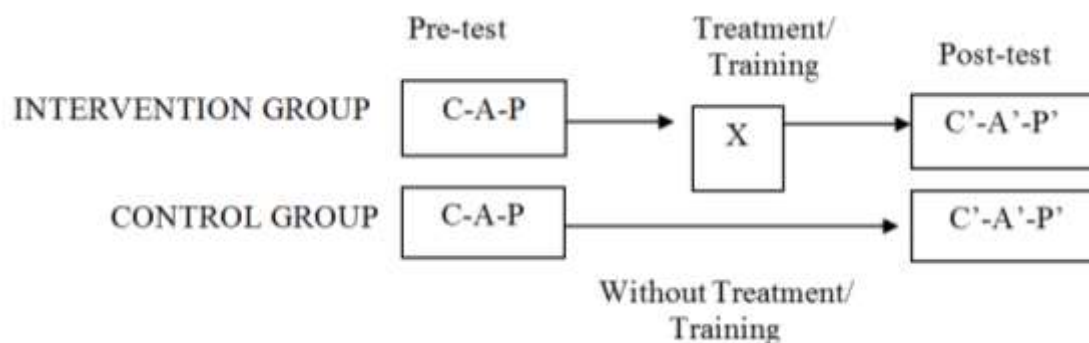
Indonesia is an archipelago country susceptible to disasters. The United nations has stipulated the period of 1990-1999 as the International Decade of Natural Disaster Reduction, or IDNDR, by promoting efforts to reduce the impact of natural disasters with the theme of “Creating a Culture of Prevention” (WHO, 2002). In Indonesia, the program is realized by the program of Community-Based Disaster Risk Reduction (Indonesian, and henceforth, PRBOM). Children are one of the groups vulnerable in disasters as well as the priority group to be helped or to help themselves during disasters. According to Mulyadi (2009), children residing in disaster-prone locations and directly experiencing disasters will suffer from prolonged physical and psychological trauma if they are not given appropriate and accurate intervention. Child and adolescent victims of disasters are frequently forgotten, leading to psychological trauma that can negatively impact on their quality as human beings (Ichmad, cited in Haryadi and Bahawere, 2009). Considering these problems, it is time for children to be provided with appropriate knowledge of disaster. They have to be the primary target of PRBOM policy launched by the government. A survey conducted by LIPI or Indonesian Institute of Sciences (2006-2007) in eight Indonesian regions, including West Java, concludes that schools are the institution most unprepared for disasters. Meanwhile, in fact schools are the most ideal place to inculcate, socialize, and train anticipation as well as reaction to the coming disasters.

Protecting children from disasters requires two different priorities and actions, namely reduction of disaster risks and improvement of school safety, which consequently requires well-directed and guided organization or planning of disaster mitigation, for the mitigation that has until currently been implemented is not well-oriented, systematic, and well-planned (Karnita, 2009). There should be an attempt of reducing disaster risks on the basis of education, one of which is by embedding the materials on disaster into compulsory subjects for each student. Such a disaster mitigation-based educational curriculum is still excluded from the education system (Mahfud, 2009). In order to ensure the continuity of PRBOM program in educating school-age children about disasters, it will be better if the transmission of knowledge of disaster to these children is carried out in the form of intensive training at the level of junior high school. The training program of Disaster Awareness for School-Age Children or *Pelatihan Anak Sekolah Kenal Bencana* (Indonesian, and henceforth, ASAL KENA) is organized by considering the various aspects mentioned above. It is designated to provide junior high school adolescents with basic insights and knowledge so that they will be responsive and reacting positively to disasters, in line with the government program on Community-Based Disaster Risk Reduction (PRBOM). In addition, ASAL KENA training is designed to provide the trainees with knowledge of how to reduce disaster risks, accompanied by knowledge in terms of provision of medical aid and other health-related issues appropriate for junior high school

students, such as how to wash hands hygienically, reproductive health, Disaster First Aid, and efforts of giving basic life support to disaster victims.

## II. RESEARCH METHOD

The research employed a quasi-experimental design with randomised two group pre-post-tests (control group design). This design was specifically employed to compare the levels of knowledge, skills, and attitudes of school children (junior high school students of the eighth and ninth grades) concerning disasters before and after the training of ASAL KENA.



Note:

C-A-P : Cognitive-Affective-Psychomotor

X : Treatment of ASAL KENA

Figure 1. Research Design

The research was conducted at State Junior High School (Indonesian, SMPN) I Banjaran Jalan Pajagalan Number 3, Banjaran, Bandung Regency, for 3 (three) days, from 12-14 September, 2014. The population consisted of junior high school students in Banjaran District, Bandung Regency, including SMPN I Banjaran, SMPN II Banjaran, SMPN I Arjasari, SMPN 1 Cimaung, SMPN I Pameungpeuk, SMP Pasundan Banjaran, SMP Umiik Banjaran, SMP Bina Negara Banjaran, SMP Dua Mei, and SMP Handayani 1 Banjaran. The sample was taken from several junior high schools in the regions vulnerable to disasters for the past few years. The number of sample until the end of the training was 107. The sample was taken with purposive random sampling. In practice, there were 214 students as respondents, divided into intervention and control groups, with 107 respondents in each group, respectively. The instrument used to collect data included a form of respondent's biographical data (Form A), a list of questions/items on knowledge of disaster (Form B), a skill observation sheet (Form C), and a questionnaire of junior high school student attitude scale (Form D). The independent variable in this research was the training model of *Anak Sekolah Kenal Bencana* or training of disaster awareness for school-age children (ASAL KENA), which is a training to cultivate understanding of disasters that is well-structured and integrated, encompassing the aspects of knowledge, skills, and attitudes for the junior high schools students in Banjaran District, Bandung Regency. The training is delivered with educative and creative methods, assessed by the guidelines of standards for training curriculum in the form of nominal scales. Meanwhile, the dependent variable was the behaviour of junior high school students, defined as responses demonstrated by junior high school students in Banjaran Sub-District to a disaster-before, during, and after the disaster in terms of the aspects of knowledge, skills, and attitudes.

A univariate data analysis was undertaken to analyse the respondents' characteristics and research variables in the forms of numerical data by considering the value of central tendency or the proportion of each variable, including: age, gender, school of origin, experience with disasters, and school grade. On the other hand, a bivariate analysis was conducted to test the mean differences of the two groups before and after the training for the variables of knowledge, skills, and attitudes, respectively. Finally, paired *t*-tests (two means) for dependent samples and independent samples were carried out.

### III. RESULTS

#### Control Group

Table 1. Distribution of knowledge, attitudes, and skills of the control group (n=107)

| VARIABLE         | $\bar{x}$ | SD   | SE   | N   | P     |
|------------------|-----------|------|------|-----|-------|
| <b>KNOWLEDGE</b> |           |      |      |     |       |
| Before           | 65.75     | 5.48 | 0.53 | 107 | 0.205 |
| After            | 66.53     | 5.31 | 0.51 | 107 |       |
| <b>ATTITUDE</b>  |           |      |      |     |       |
| Before           | 69.82     | 3.98 | 0.38 | 107 | 0.000 |
| After            | 70.35     | 4.51 | 0.43 | 107 |       |
| <b>SKILL</b>     |           |      |      |     |       |
| Before           | 17.38     | 8.83 | 0.85 | 107 | 0.000 |
| After            | 21.07     | 7.45 | 0.72 | 107 |       |

The score of knowledge increased for 0.78 after training (post-test). The average increased score for attitudes during pre-test was 69.82 and rose to 70.35 in the post-test. Meanwhile, the average score for skills during pre-test was 17.38 and increased to 21.07 in the post-test.

#### Intervention Group

Table 2. Distribution of knowledge, attitudes, and skills (n=107)

| VARIABLE         | X     | SD    | SE   | N   | P     |
|------------------|-------|-------|------|-----|-------|
| <b>KNOWLEDGE</b> |       |       |      |     |       |
| Before           | 54.61 | 9.21  | 0.88 | 109 | 0.000 |
| After            | 70.68 | 6.85  | 0.65 | 109 |       |
| <b>ATTITUDE</b>  |       |       |      |     |       |
| Before           | 73.45 | 5.09  | 0.48 | 109 | 0.000 |
| After            | 78.28 | 5.68  | 0.54 | 109 |       |
| <b>SKILL</b>     |       |       |      |     |       |
| Before           | 17.52 | 8.83  | 0.84 | 109 | 0.000 |
| After            | 59.86 | 17.67 | 1.69 | 109 |       |

The mean score of knowledge had an increase of 16.0 with  $p = 0.000 \leq \alpha (0.05)$ . The score indicates there was a difference in the average score of knowledge before and after training; therefore, it can be concluded that the training of ASAL KENA had an influence on the improvement of the knowledge of the junior high school students in Banjaran District. Meanwhile, the mean score of attitudes had a 4.83 increase with  $p = 0.000 \leq \alpha (0.005)$ . The score demonstrates that there was a significant difference in the mean score of attitudes before and after training, so that it can be inferred that ASAL KENA training had an influence in improving the attitudes of the junior high school students in Banjaran District. Finally, the mean score for skills was 42.19 with  $p = 0.000 \leq \alpha (0.005)$ . This score shows that there was a significant difference in the mean score of skills before and after training, leading to a conclusion that ASAL KENA training had an influence in the increased skills of the junior high school students in Banjaran District.

#### Changes in the Knowledge, Attitudes, and Skills of the Intervention and Control Groups

Table 3. Distribution of changes in the knowledge, attitudes, and skills of the intervention and control groups (n=107)

| VARIABLE         | X     | SD   | SE   | N   | P     |
|------------------|-------|------|------|-----|-------|
| <b>KNOWLEDGE</b> |       |      |      |     |       |
| Control          | 0.78  | 9.37 | 0.89 | 107 | 0.000 |
| Intervention     | 16.07 | 6.24 | 0.59 | 109 |       |

|              |       |       |      |     |       |
|--------------|-------|-------|------|-----|-------|
| ATTITUDE     |       |       |      |     |       |
| Control      | 0.72  | 1.55  | 0.52 | 107 | 0.000 |
| Intervention | 4.83  | 5.50  | 0.14 | 109 |       |
| SKILL        |       |       |      |     |       |
| Control      | 3.69  | 6.09  | 0.58 | 107 | 0.000 |
| Intervention | 42.33 | 17.85 | 1.71 | 109 |       |

For the variable of knowledge, a great difference is observed in the average scores of the control group and intervention group before and after ASAL KENA with  $p = 0.000 \leq \alpha 0.05$ , meaning that there was a difference in the pre-test and post-test scores for knowledge between the two groups, leading to a conclusion that ASAL KENA training could increase the knowledge related to disasters of the junior high school students in Banjaran District, Bandung Regency. For the variable of attitudes, there was an increase in the mean scores of the control group and intervention group before and after ASAL KENA training. Because the value of  $p = 0.000 \leq \alpha 0.05$ , then there was a difference in the mean scores of the pre-test and post-test for the variable of attitudes between the control and intervention groups; thus, it can be inferred that ASAL KENA training could improve the attitudes of the junior high school students towards disaster in Banjaran District, Bandung Regency. The variable of skills likewise shows a change in the mean scores for both the control and intervention groups before and after ASAL KENA training. As the value of  $p = 0.000 \leq \alpha 0.05$ , it indicates that there was a difference in the pre-test and post-test scores of the variable of skills between the control group and intervention group, thereby leading to a conclusion that ASAL KENA training could increase the skills of the junior high school students in Banjaran District, Bandung Regency, in encountering disasters.

#### IV. DISCUSSION

##### A. The Effects of ASAL KENA Training on Knowledge

The findings are in accordance with the general understanding that one's behaviour is based on his or her knowledge, while one of the influencing factors of knowledge is education. People who are educated are more likely to gain more information; therefore, they will have more knowledge than those lacking educational experience (Hasni, Nurdin and Edwar, 2012). On the other hand, the process of how children's adaptive reactions to disaster experience or disaster simulation will help create children who are more prepared for disasters is illustrated by Sulistyarningsih (2009) in the following model:

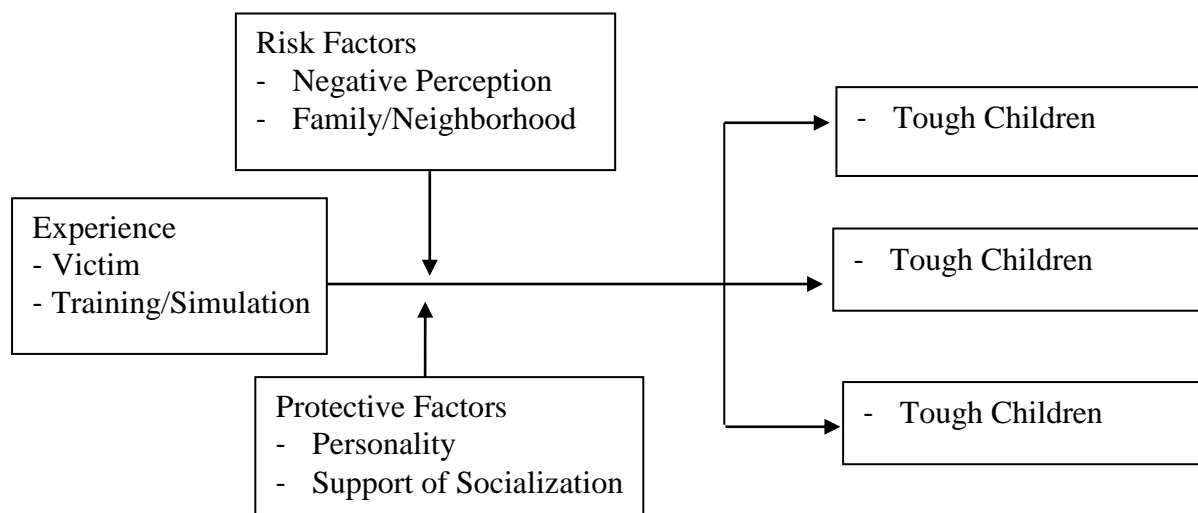


Figure 2. A Model of children's adaptive reactions to disaster experience through a simulation

The concept of tough children in chart 2 becomes important because adequate knowledge of life skills will help children, especially those in the elementary and secondary schools, during a disaster, as they will be able to make self-rescue and help others (National Research Council, 2007). The learning experience gained from ASAL KENA training through a series of interesting and educative demonstration, simulation, and discussion will help children unconsciously internalize knowledge in their system of memory. This means that experiential learning theory should be characterized with (1) design-oriented, namely focusing on efforts of realizing learning goals; (2) identification of learning methods (how to support and facilitate learning) and the situation in which the methods are used/not used; and (3) use of learning methods which can be elaborated into instructional plans (Notoatmojo, 2005). Knowledge is essentially all of the things we know of a certain object, and each type

of knowledge has specific characteristics regarding the what (Ontology), how (Epistemology), and what for (Axiology) (Suriasumantri, 1999).

Knowledge of disasters is very important for junior high school students who are considered as a group prone to disaster. On the one hand, children are the most vulnerable group, thereby requiring knowledge and information; on the other hand, children can be the most effective mediator for knowledge transmission to their peers and family (Spence, 2008). The use of training method is designed as the guidelines in order to elicit students' various potentials. Training is one of the proper and effective learning methods to help children go through well-planned and continuous learning process (Harahap, 2012). This argument is in line with that of Sukarta (2012), who stated that training is a collective learning system. Its primary aim is to increase the effectiveness and efficiency of learning in schools so that the learning will be useful at home. Thus, training can be done to any community group.

ASAL KENA training for junior high school students in Banjaran District is one of the services that can be developed by education institutions into the official learning curriculum integrated with core subjects or as an extracurricular content that should be continuously developed and given to students. As put forward by Ferawati, Rusilowati, and Supriyadi (2012), students who were given instruction on disasters integrated with natural science subject using the media of simulation gained more knowledge on disasters than those taught using student worksheets only. The correlation between students' understanding of disasters as reflected in their knowledge and behaviour in encountering disaster was explained in the research of Chaerumni, Sri, and Rida (2013), which revealed that the main focus of disaster preparation is knowledge related to disaster preparation for the group most vulnerable to disasters. Various experiences show that disaster preparedness is frequently neglected by members of communities who have not had any direct experience with disasters. Human adequate knowledge of the danger, vulnerability, risks, and activities of reducing disaster risks can help create effective community actions—both individually and in cooperation with other stakeholders—in coping with disasters. This is supported by the research conducted by LIPI (2006), which shows that the major influence in the level of preparedness and alertness of Aceh rural communities is determined by an adequate level of knowledge of the individual/household, so that the an index of 72 for households' knowledge represents disaster preparedness.

#### ***B. The Effects of ASAL KENA Training on Attitudes***

Both groups show differences in the mean scores for attitudes between their pre-test and post-test. Although statistically the increase in the scores of both groups was significant, substantially the control group did not acquire a significant increase. The increase in the attitude score of the control group was caused more by the fact that the respondents were already familiar with the items being tested in the pre-test and post-test. According to social psychologists, the interaction among components of attitude is ideally a result of harmonious and consistent relationships among the three aspects of attitude, namely cognitive, affective, and conative. This is so because when faced with the same object of attitude, the three components (cognitive, affective, and conative) should naturally form a uniform attitude. When one of the components is not consistent with the other components, disharmony will be created, causing a change in the attitude in such a way that consistency will be achieved once again (Azwar, 1995). The change in the attitudes of the junior high school students in Banjaran District as the respondents to the training was formed as a result of the internalization of the various training materials and methods they were provided with. Training method with practical instruction in the forms of demonstration and simulation will result in knowledge reflected in the form of attitudes. The simulation method of disaster mitigation in the training was conducted in accordance with Rinanda's argument (2013) that simulation is one's efforts to behave in a fashion similar to that of the targeted person or object, with the aim of learning in more depth about how the person feels and acts; thus, disaster simulation is basically a kind of game in the teaching of disaster preparation adopted from the real life.

For school children, making decision on what attitude to take during disaster is not easy. It requires the ability to make appropriate decision during emergency. It is the ability to take a certain attitude during emergency that should be inculcated in junior high school students in preparing for disaster and making efforts to keep alert. Thus, a spontaneous attitude of self-rescue and self-preparation for disaster will be created (Rinanda, 2013). The spontaneous attitude trained during the training of ASAL KENA can be explained by referencing the theory of reasoned action proposed by Ajzen and Fishbein (as cited in Azwar, 1995). The theory states that attitude affects behaviours through a careful and reasoned decision-making process, and its impacts are limited to three things, namely: 1) behaviours are not greatly determined by general attitude; rather, they are determined by a specific attitude towards something, 2) behaviours are not only affected by attitudes, but also by subjective norms, 3) attitudes towards a certain behaviour along with subjective norms form an intent to behave in a certain way.

The attitudes of the junior high school students in Banjaran District that show positive responses and good understanding of disaster in this research are proof that there is a harmony among the components of cognition, affection, and conation. According to Mann (cited in Azwar, 1995), cognitive component contains perceptions, beliefs, and stereotypes held by an individual about something. With ASAL KENA training, the junior high school students in Banjaran District are provided with self-rescue education to conduct mitigation in the classroom during earthquakes, for instance, so that they can save themselves without others' help. In terms of affective dimension, the junior high school students in Banjaran District have internalized the attitudes very well. The perceptions, beliefs, and stereotypes developed concerning disasters have shown a good or stable level of acceptance. The same is true for the affective dimension of the emotional acceptance of the junior high school students in Banjaran District. Therefore, the school, as an education institution responsible for advising and supervising students in disaster intervention, should be continuously involved in the attempts of growing positive attitudes in students through various activities encouraging the attainment of information about disasters, thereby affecting the emotional condition of the students and their acceptance as well as positive attitudes. Hence, efforts of maintaining positive attitudes are required in order to keep the attitudes thriving far until the future. This condition is in line with the argument that attitude is the preparedness to respond either positively or negatively to a certain object or situation consistently. In other words, attitude is a tendency of an individual to act in the form of close responses to certain stimuli or objects (Sunaryo, 2004). Thus, attitude can determine one's consistency in behaving according to his or her choice to respond to his or her surroundings.

### **C. *The Effects of ASAL KENA Training on Skills***

Skill is the aspect among the three dimensions in which the junior high school students show the most changes. The findings suggest that the difference between the control and intervention groups was significant, so that it can be concluded that there was a difference in the mean scores of disaster-related skills of the junior high school students in Banjaran District between those in the control and intervention groups after ASAL KENA training. The changes observed in this research prove that ASAL KENA training can change the skills of students as one of the components of students' behaviours in responding to disaster. This finding is similar to that of Khairudin's research (2011), showing that the actions of taking shelter in a safe place and running out of the room are some of the choices students can make in responding to a disaster.

The mean scores gained during pre-test were very small for both of the groups, namely 17.38 and 17.52, indicating that students did not have adequate skills in making a decision to act, behave and take a certain attitude correctly and appropriately during a disaster, before and during emergency response phase. As an illustration, it was explained to the junior high school students that the important thing to do during a disaster is the skill of self-rescue in various ways, instead of helping others. However, in the simulation demonstrated to students, both during pre-test and post-test, many of the skill items were still ignored by them, resulting in their prioritizing of saving possessions and other people. Meanwhile, for children saving other people who are also victims of disaster is not a priority. Rather, the applicable principles for them are "do no harm" and "build back better", which means that rebuilding is the key to effective efforts of reducing disaster risks or reducing the exposure of children to the risks (Reinhart, 2014).

Training and simulating disasters to junior high school students can increase their self-confidence and positive self-concept in preparing for disaster. In addition, it can build a strong and solid character in coping with every difficulty caused by disasters. The findings of this research support those of Nirmalawati's (2011), in which her research has found that to form the self-concept of primary and secondary school students in disaster mitigation can be done by transforming their skills, attitudes, and behaviours in facing natural disasters.

Furthermore, in terms of skills, the junior high school students in Banjaran District have acquired the tendency to act (conation) cooperatively, so that they can adopt various guidelines, suggestions, and input given by the trainers during ASAL KENA training. It is in this regard that advisers in the field of disasters, namely educator, care giver, facilitator, and advocator play a key role. Including in their functions are the attempts of empowering and enabling school children, as the group most vulnerable in a disaster, especially in the pre-disaster phase, as an effort of disaster mitigation and preparedness. Referring to the above explanations, the findings of this research are in line and in support of those findings in the research conducted by Agustiana, Wibawa, and Tika (2012), in which they mentioned that the learning model of disaster mitigation (such as employed in ASAL KENA training) has been proven to be more effective in increasing students' understanding of the natural science subject compared to those taught with conventional learning model.

## **V. CONCLUSION**

1. The junior high school students in Banjaran District gained equally great scores on their knowledge, attitudes, and skills of disasters in all research groups (control and intervention).

2. The training of *Anak Sekolah Kenal Bencana/Disaster Awareness for School-Age Children (ASAL KENA)* could increase the knowledge, skills, and attitudes of the junior high school students in Banjaran District, Bandung Regency, in relation to various issues pertaining to disaster preparedness. Statistically, there was a significant increase in the mean scores of knowledge, attitudes, and skills as proven by the  $p$  value of  $(0.000) \leq \alpha (0.05)$ ,
3. *Anak Sekolah Kenal Bencana/ Disaster Awareness for School-Age Children (ASAL KENA)* Training is a form of education and training for junior high school students with the purpose of introducing various things pertaining to disaster preparedness as a part of the realization of the program of Community-Based Disaster Risk Reduction (PRBOM).
4. ASAL KENA training was conducted using educative and creative approaches that are in accordance with children's development and growth stages, and by carefully considering the principles of education and instruction. The materials delivered in ASAL KENA have been designed in line with the curriculum for training, namely by integrating three core materials: 1) **Basic Materials** on the importance of junior high school students' mastery and understanding of disasters; 2) **Core Materials** concerning various types of disaster-related knowledge and understanding that should be acquired by junior high school students, added by information on first aid for disaster victims that can be performed by junior high school students, and 3) **Support Materials** regarding problems pertaining to government's health programs.

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4. Junior high school students in Banjaran Sub-District, Bandung, Indonesia as respondents of this research.

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