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Transformation Prospect of a Non Disaster-Prepared-School in Implementing Management of Child Safety Education

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Article Info	Abstract
	Primary School X is an inclusive primary school that enrolls children with special needs, located in a disaster-prone area and never been exposed to information and training related to child safety education. The purpose of this study is to investigate the readiness of Primary School X as a non disaster-prepared inclusive-primary-school in implementing child safety education management. This study combined descriptive and analytic studies. Descriptive study was used to assess school management condition through 28 assessment and was conducted through interviews, document study and observation. The analytic study used was quasi-experimental study with one group pre- and post-test design. The result showed that the readiness level of Primary School X to transform into multi-disaster-based child safety was 36%, which is included into transformation "ready" category.

INTRODUCTION

In Indonesia, children is defined as someone who is not yet 18 (eighteen) years old, including fetus (Undang-Undang Republik Indonesia No 35, 2014). Primary school children are considered vulnerable because they are in a period of growth and development. Due to their excessive energy, they tend to move around. In addition, they are highly curious about new things in their environment. Therefore, minor and major accidents often occur during activities such as playing, teasing, exercising, crossing road and walking home from school which also frequently cause panic at school. As an example, based on UKS (Usaha Kesehatan Sekolah or School Health Efforts) data, in Bernadus 02 Semarang, the-

re were 9 students who suffered from injury and 5 students had to be referred to hospital due to fractures and sprains due to slipping, running and falling (Hutasoit & Widowati, 2017).

Accidents or disasters are very likely to occur at school, and this can be worsened by the lack of comprehensive teaching materials provided to students in each grade. In grade 1, only 60% of subjects contain safety education values, and the number fluctuates from 14.3%, 90%, 100%, 87.5%, and 50% of subjects for grade 2 to 6 respectively. Therefore, more efforts are needed to improve safety knowledge among children, especially in schools (Widowati et al., 2018b).

Therefore, comprehensive effort to prevent

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accidents among children is necessary and should involve school, teachers, parents, caretakers and the community (Halman et al., 2017; Mowen, 2015). This can be done by expanding the role of teachers and school as the parties responsible for child safety at school. Preventive efforts through cultural cultivation is essential; this can be started from simple introduction to safety culture. However, interviews with teachers and headmaster showed that there has been insufficient exposure to information and training for teachers on child safety in primary schools; in this instance, Primary School X as one of the inclusive primary school and enrolls several children with special needs (Anak Berkebutuhan Khusus) and also located in disaster-prone area (Bantul Regency, Yogyakarta). Therefore, teachers' role in safety education for primary school children is minimal. In addition, early observation result by researchers found a high risk practice in the school; the school gate was locked and they key was kept by canteen attendant who was not always available to open the gate, potentially increasing the number of casualty should a disaster occur. This is due to the lack of knowledge of school management and teachers about the safety aspects of children in school. Children are the nation's future assets that must be protected from things that can negatively impact their growth and future. Based on the background, the following research problem is formulated: "how ready is Primary School X as a non disaster-prepared inclusive-primary-school in implementing child safety education at school?"

Safety indicators and disaster preparedness such as school policies, disaster planning and resource mobilization have not been completely implemented in schools. Therefore, programs to completely implement disaster preparedness education is highly needed in Indonesia (Novalita & Widowati, 2018).

On other hand, cases of violence (physical, psychological or sexual) against children in Indonesia tend to increase, including those that occur at schools. Games have the potential to be used in providing safety education, especially in the prevention of violence and bullying at school. Safety education for children can be conducted through various methods, for example through games. Snake and ladders game which contains important elements related to child safety education, in the context of protecting children from violence and bullying at school, is effective in increasing children's knowledge by 150% (Widowati et al., 2019). In addition, safety education snake and ladders game that presents 12 pictures containing values of prevention against accidents and injuries in children was proven to increase children's safety knowledge by 72.8% (Wido-

wati et al., 2018a).

The purpose of this study is to determine how ready was Primary School X as the non disaster-prepared inclusive-primary-school in implementing child safety education management in schools. This research can benefit schools in the form of input for developing school-based disaster risk reduction plans, programs and activities through activities to increase school management capacity in providing safety education for children, so that teachers and all school members can actively participate in providing safety education to students. The long-term impact is supporting the realization of a safety culture and reduce the number of injuries and accidents that occur among children at school.

METHOD

This study combines descriptive and analytic studies. Descriptive study was used to assess school management condition in implementing safety education for children in school through 28 assessment components and was conducted through interviews with school principals, teachers and employees; document study and observation. The assessment component used refers to 8 related standard guidelines, among others: RI Law No. 24 of 2007 concerning Disaster Management; Head of BNPB Regulation No. 4 of 2012 concerning Guidelines for Implementing Schools/Madrasas Safe from Disasters; Disaster Preparedness School Framework; 2015 Ministry of Education and Culture School/Madrasah Roadmap; Mainstreaming Strategy for Disaster Risk Reduction in Schools; Module 1: Pillar 1 Safe School Facilities; Module II: Pillar 2 of Disaster Management in Schools; Module III: Pillar 3 Education, Prevention and Disaster Risk Reduction.

The analytic party of the study used quasi-experimental with one group pretest and posttest design (Murti, 2003) which was conducted by giving treatment to the entire population of safety management education system at school, which consisted of 14 persons that includes headmaster, teachers and non-educator staffs. The treatment given was educating teachers and school managements on essential child safety education. The headmaster was also involved as the decision maker to commit on formulation of child safety education policies at school. The intervention method used was providing training and simulations through various media, namely training modules, videos, games and Portable Fire Extinguishers (*Alat Pemadam Api Ringan*). The evaluation process was carried out before and after the treatment through pretest and posttest.

RESULTS AND DISCUSSION

The research result will be presented through

integration of disaster mitigation risk practices summarized in 12 indicators and 28 components of evaluation of child safety education management at school. The existing indicators include: commitment indicators consisting of five assessment components, namely vision, school mission, planning aspects at school, the existence of a task force and programs/activities in the school; reporting system indicator consisting of one component; indicators of intra-curricular activities represented by four components: teaching materials, learning instructions, learning evaluation tools and ownership of guides or modules for safety in school laboratories; extra-curricular indicators consisting of two components: extracurricular education and the availability of supporting information related to safety education in school; infrastructure indicators consisting of two components: availability of buildings and facilities and practices or behavior of school residents towards the existing infrastructure in school; emergency communication indicators consisting of two components: audio and/or visual emergency communication facilities and safety signs/instructions during emergencies; Emergency standard operating procedure (SOP) indicators consisting of four components: response, referral, evacuation and reunification SOP; training indicators consisting of two components: training component and simulation/drilling; risk assessment indicators consisting of one assessment component; monitoring system indicator consisting of 3 components: internal supervision system, a participatory supervision system and the availability of a feedback mechanism; partnership indicators consisting of one assessment component; Indicators of school community knowledge on child safety education consisting of one assessment component. The detail is presented below.

The best method to assess the influence of integrated disaster mitigation strategies is through evaluation of current disaster mitigation strategy's impact on mitigating the various factors that constitute an existing vulnerability. Afterwards, the strategy's influence is measured when we could overcome the factors that constitute such vulnerability in achieving socio-economic development performance target (Palliyaguru et al., 2013).

1. Overview of disaster events in Primary School X

From interviews with principals and teachers, as well as document study, it was known that the type of natural disasters that have occurred in Primary School X was earthquakes, while non-natural disasters that have occurred in Primary School X were child accidents at school. An example would be a student getting hit by school gardener's car du-

ring gardening activity, resulting in a head injury that requires medical stitching. There was another incident where a child accidentally swallowed a pebble kicked by another child while playing, requiring a surgery to remove it. There were also cases of children involved in pornographic activities.

2. Overview of Primary School X's commitments related to the implementation of child safety education management in School

There are five components of assessment for commitment indicator, namely school vision, school mission, planning aspects of the school, the existence of a task force and programs/activities at school. Primary School X had a vision: righteous, smart, noble, and cultured. Cultured here can be interpreted broadly, including safety culture. Regarding school mission, safety education can be included into the following mission: habituate healthy behaviors in daily life this safety education can enter a mission that reads: getting used to healthy behavior in daily life. In planning aspect, there was a school policy document for submission to become an inclusive school starting from 2017 by assessing suspected children with special needs and cater special education and training to children with special needs according to the result of assessment. This planning has been accommodated in the budget allocation for 2018-2019 and 2019-2020. With regards to the existence of a task force, Primary School X already has a formally established task force with its own activities such as yearly Task Distribution Decree. Disaster risk mitigation program/activity that had been carried out include the 2018 earthquake simulation and the 2019 fire simulation. Programs/activities that on non-natural or social disasters had never been conducted at this school. Increasing world population tend to increase the frequency of natural disaster. However, disease prevention and mitigation efforts for natural and non-natural (social) disaster are completely possible to do. Therefore, disaster management and planning must be holistically integrated in the society to ensure that disaster is considered a shared responsibility (Trim, 2004).

3. Overview of accident, disaster and incident reporting systems at school

The reporting system in Primary School X was carried out by recording the accident that occurred at the school and how the school handled the accident. However, so far only accidents have been recorded; there was no record of natural and non-natural (social) incidents or disasters. From interview with the teacher, it was found that there was a student who accidentally watched pornographic action but there was no record nor follow-up to the

child (the reporter, who is also the victim) because of the limited knowledge and capacity of the teacher.

4. Overview of intra-curricular activities

Intra-curricular activity is represented by four components: teaching materials, learning instructions, learning evaluation tools and ownership of guides or modules for safety in school laboratories. From interviews and document studies related to intra-curricular activities, Primary School X had teaching materials in the form of a Thematic book (Natural Event) Theme 8 Class 1. Learning instructions containing the content of safety education are also available, especially for safety during natural disasters. There are also other themes such as natural disasters with the following content: types of natural disasters, their causes and effects. Evaluation tools containing safety education was found in Indonesian language subject such as in the following content: "What should be done in the event of a natural disaster?". However, Primary School X did not have safety laboratory modules to guide students to behave safely during laboratory activities.

5. Overview of extracurricular activities

In this extracurricular indicator there are two components, namely through extracurricular education and providing supporting information related to safety education in schools. Child safety education was provided through extracurricular activities such as through scouts, such as making drag bars and helping victims of accidents during first aid theme. Extracurricular activities also provided supporting information on disaster risk mitigation for the school community such as in the form of information sharing through the internet for the principal, teachers, students, school committees, library officers, security guard, cleaning services, and canteen workers. However, such informal sharing of information is not programmed and structured and its effectiveness has never been evaluated. Therefore, the members of school community did not have sufficient knowledge on disaster risk mitigation. This was confirmed from the low average pre-test result (score of 28) before the intervention.

6. Overview of school infrastructure

Infrastructure indicator consists of two components: availability of building and its facilities and the attitude of school community towards the existing school infrastructure. Primary school X has school buildings, classrooms, teacher room, headmaster office, library, health office, canteen, toilet and school fences that met safety standard such as: sturdy, strong, stable and earthquake resistant. However, there were high risk behavior such as locking

the school gate, but the key was carried by canteen worker. In the case of fire, people can be trapped inside the school and potentially increase disaster casualty. Indoor facility such as school terrace and outdoor facility such as school yard met the minimum safety standard, which is made from materials that do not endanger children and absence of sharp corners that could potentially injury children while playing. Building materials and fabrication method have significant impact on disaster impact. In addition, weak regulation related to construction, such as supervision of construction also increase the vulnerability of a building towards disaster (McEntire, 2012).

7. Overview of emergency communication system

There are two components of emergency communication indicator: audio and/or visual emergency communication facility and visual communications on safety instruction or safety signs during emergencies. Primary School X already owned internal communication facilities for early warning system such as *bende* (a rhythmic metal traditional musical instrument) and bells. However, there was no agreement on a distinct sound for emergencies or disaster at school. Evacuation facility that was already owned by the school was evacuation direction; there was no evacuation map and assembly point.

8. Overview of emergency SOP availability at school

There are four components of assessment: response SOP, referral SOP, evacuation SOP and reunification SOP. Primary school X already had integrated response SOP and referral SOP which will be used in emergencies, accidents or incidents that cause injury in children, although it was not detailed in a written form. Victim(s) will be given first aid at school, and when needed, referred to the nearest Puskesmas. During non-natural disaster, victim(s) will be brought to health office room for assessment and when needed, referred to the nearest Puskesmas. In addition, Primary School X also have integrated evacuation and reunification SOP, which is reunification with families after disaster at school, especially natural disaster such as earthquakes. Teachers will coordinate students to take shelter under desks, then direct students to gather at the assembly point at the school yard. Afterwards, school will inform parents to pick up their children via class WhatsApp group, and then return the students to their parents. Meanwhile for non-natural disasters, victim(s) will be brought to health office room for assessment and when needed, referred to the nearest Puskesmas. The school will then inform the chro-

nology of incidents to the parents and the students will be returned to the parents after receiving medical attention. Primary School and other levels of education are twice likely (10% each) compared to secondary schools (4%) to conduct reunification procedure with family during disaster simulation/training activities (Tipler et al., 2017).

9. Overview of safety training aspect

Training indicator consists of two assessment components: training and simulation/drills. Disaster preparedness training in Primary School X has not been carried out optimally and regularly because there was only socialization of general safety procedure at school. From the interviews and document study, there was a recorded general safety training activity conducted at 17th June 2018 for teachers and school workers. The only simulation/drill conducted in Primary School X was first aid for disaster victims, which was conducted at Saturday, 9th February 2018 for all students. This condition was markedly different from schools in New Zealand where 88% of the schools have conducted drills for earthquakes. In New Zealand, the percentage of schools conducting such trainings was higher among primary schools (92%) compared to other levels of education (81%) and secondary schools (68%) (Tipler et al., 2017).

10. Overview of risk assessment at school

Primary School X has not conducted risk assessment, resulting in absence of such documents and minimal school planning for implementation of safety education and preparedness for children, and minimal anticipatory measures during accidents and disasters. Ideally, a school should have risk assessment document, which could be used as a guidance in formulation of child safety education and disaster mitigation activities, and anticipatory measures for safety-related incidents at school. Preparedness education for children helps children to keep safe during a disaster and disseminate preparedness information to the parents and the community. This helps the continuing process of public education programs to increase awareness, sensitivity and belief that taking appropriate action is very necessary in the face of disasters such as earthquakes. Therefore, safety education programs must be planned comprehensively based on principles of simplicity, consistency, reliability, and strive to create safety culture and willingness of the community so that risk mitigation measures can be implemented more effectively (Ghafory-Ashtiany & Parsizadeh, 2010).

11. Overview of the safety monitoring system

This indicator consists of 3 assessment com-

ponents: internal monitoring system, participative monitoring system and presence of feedback mechanism. Internal monitoring system in Primary School X was carried out yearly and independently by teachers and headmaster. There was no participative monitoring system which includes agents or stakeholders outside the school such as school committee, school supervisor, Department of Education, Community Institutions, Non-Governmental Organizations (NGOs), professional organizations, Indonesian Red Cross (Palang Merah Indonesia or PMI), Regional Disaster Management Agencies (Badan Penanggulangan Bencana Daerah or BPBD), and other parties. In addition, Primary School X did not have a feedback mechanism that could be used to collect feedbacks for improvement or reporting that could be used by every school resident, including parents/guardians.

12. Overview of partnership aspect

In safety aspect, Primary School X had several key partners such as Kasihan Sector Police Station and Puskesmas Kasihan I. Partnership with the two institutes was started in 2017. Partnership agreements and mechanisms were written in MoU documents between the school and the involved institutions (Police and Puskesmas). Partnership has a strategic role because they can work together with service provider, education authority, teachers and students to include disaster risk mitigation into public and private schools' curriculum. If started from the school community, initiatives can be designed to increase teacher awareness about what risks can potentially occur at school, and at the same time be used to provide information to students, who will disseminate the information to their parents and relatives (Burnside-Lawry & Carvalho, 2015).

13. Overview of school community's knowledge on child safety education

To measure the level of knowledge of school residents involved in the management of child safety education in schools, a pretest assessment was conducted, followed by an intervention in the form of training on concepts and examples of child safety education implementation at school by the research team and then reassess their knowledge through a post-test. The average value of pretest score was 28, while the average posttest score was 73. This result showed that intervention in the form of exposure and training that was done through lecture, case studies and provision of games through video and pictures was effective to increase the knowledge of school residents which consisted of the headmaster, teachers and employees. The increase in knowledge was 161%. After data collection has been completed,

the researcher team continued providing activities assistance through lecturer dedication program so that school management can perform self-assess-ment independently and determine what is needed to create a safe and resilient school environment. Teachers and students play an important role to

Table 1. Pretest and Posttest Result

No	Code	Pretest Score	Posttest Score	Sex	Working Duration	Age	Position
1	A	0	45	Female	16 years	37	Dance Teacher
2	B	5	-	Male	6 years	31	6th grade teacher
3	C	10	75	Male	35 years	63	School Keeper
4	D	10	50	Male		23	School Keeper
5	E	20	90	Female	13 years	53	5th grade teacher
6	F	30	90	Female	13 years	35	2nd grade teacher
7	G	40	85	Female	2,5 years	36	English teacher
8	H	25	100	Female	5 months	24	3rd grade teacher
9	I	40	85	Female	5 years	44	Islamic education teacher
10	J	30	65	Female	5 years	34	1st grade teacher
11	K	40	80	Male	9 years	33	Sports education teacher
12	L	30	65	Female	2 years	27	4th grade teacher
13	M	30	45	Male	6 years	47	Qur'an education teacher
14	N	50	-	Female	2 years	49	Headmaster
Average:		28	73	Increase in posttest = 161%			

14. Transformation effort overview of Primary School X readiness in child safety education implementation

To assess the readiness in implementing child safety education management of Primary School X, 12 indicators with 28 assessment components were used to evaluate the management of child safety education at school as shown in Table 2.

From table 2, it can be seen that 36% of the components were assessed as "good" and ready to transform, meanwhile 50% of the items were assessed as "not optimal" and 14% was not implemented, hence 64% of the components showed that Primary School X was not ready to transform. There must be a considerable effort to implement child safety education at school because 64% of the components are not ready yet. To accelerate the implementation, a formulation of programs/activities to increase the quantity and quality of a more comprehensive and multi-disaster partnership is needed, which could include the Department of Education, Regional Disaster Management Agency *(Badan Penanggulangan Bencana Daerah),* Indonesian Red Cross *(Palang Merah Indonesia)*, Universities, Non-Government Organizations/Community Institutions,

School Committees, Professional Organizations and other related parties.

Teachers and headmaster stated that this research has greatly benefited the school, headmaster and teachers, which would in turn benefit the students (Barghi *et al.*, 2017). This is because Primary School X has never received child safety education training and is located at disaster prone area with "medium" potential for earthquake and flood, and there was high risk of accidents among the students at school, as shown from the number of serious accidents that have occurred in the school.

There should be an assistance from Department of Education or other related stakeholders to help the school fulfills the indicators and assessment components of Child Safety Education Management at School in a more intensive and comprehensive manner. In addition, formulation of disaster preparedness plan and documents are needed, such as: formulation of risk assessment at school (Hosseini and Izadkhah, 2006); written detailed SOP that is socialized to every school members; regular simulations (Chen and Lee, 2012); fulfilling basic safety infrastructures such as: evacuation direction, assembly point sign and an agreement on how school

Table 2. Transformation Effort Overview of Primary School X Readiness in Child Safety Education Implementation

No	Indicator Points	Component Implementation Status Evaluation			Findings
		Excellent	Not optimal	None	
1.	Commitment	4	1		Special programs/activities for non-natural or social disasters had never been carried out.
2.	Accident, disaster and incident reporting system at school		1		Specifically, non-natural disaster events do not have a reporting system yet.
3.	Intra-curricular activities	3		1	No laboratory safety learning modules yet.
4.	Extracurricular activities		2		Education during extracurricular activities is limited to first aid responses, while supporting safety information has not been provided optimally.
5.	School Infrastructure	1	1		Still carried out practices that pose risks to aspects of child safety.
6.	Emergency communication system		2		There was no agreement on the bell sound during an emergency, no evacuation map and no sign for evacuation points.
7.	Availability of SOP for school emergencies		4		SOP response integrated with referral SOP, evacuation SOP integrated with reunification SOP is available, but not detailed.
8.	School management training in safety aspects		2		Training is limited to socialization of general safety aspects and first aid training. Simulation/drills has not been conducted regularly.
9.	Risk assessment in school			1	The school does not have a risk assessment.
10.	Supervision System	1		2	School does not have participatory supervision systems and feedback mechanisms.
11.	Partnership	1			The school has partnered with Police and *Puskesmas*.
12.	Knowledge of school residents on safety education for children		1		Safety knowledge is not yet comprehensively available for a multi-disaster approach.
	Total indicators = 12 Total components = 28	10 (36%)	14 (50%)	4 (14%)	

bells should sound during emergencies; formulation of safety team or task force; initiation or formulation of safety agents at school; training for safety teams, taskforce and agents at school; and expansion of partnerships with potential stakeholders.

CONCLUSION

It can be concluded that Primary School X's readiness as a non disaster-prepared inclusive-school to transform into implementing multi-disaster based child safety education school was 36% out of 28 assessment components. There was a significant (161%) increase in the knowledge of teachers, headmaster and supporting staffs on child safety education after intervention as shown by the increase of average pre-test score of 28 (lowest score 0, highest score 50) to the average post-test score of 73 (lowest score 45, highest score 100).

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