Artikel KEMAS

by Evi Widowati

Submission date: 05-Oct-2018 03:02PM (UTC+0700)
Submission ID: 1014343931
File name: Revision_3.docx (478.99K)
Word count: 3236
Character count: 18241

CHILDREN'S SAFETY EDUCATION MODEL THROUGH CHILD-FRIENDLY GAMES

Evi Widowati[1], Rulita Hendriyani[2], Efa Nugroho[1]

Department of Public Health, Universitas Negeri Semarang
Department of Psychology, Universitas Negeri Semarang
Email:*eviwidowati@mail.unnes.ac.id*

Abstrak

Anak-anak rentan terhadap potensi bahaya yang ada dilingkungan karena perkembangan kognitif, psikologis dan sosial mereka yang masih dalam tahap belum dewasa. Pendidikan formal yang ada saat ini masih kurang dalam mengajarkan konsep keselamatan bagi anak, maka media pendidikan yang menyenangkan untuk anak sangat diperlukan agar anak dapat belajar melalui permainan edukatif yang ramah anak. Maka pengembangan model pendidikan keselamatan anak yang menyenangkan menjadi sangat penting untuk meningkatkan pengetahuan anak tentang pentingnya keselamatan, sehingga anak dapat dengan mudah memahami bagaimana menerapkan nilai keselamatan dalam hidup mereka. Kami menggunakan desain Research and Development (R & D) level 1 untuk mengembangkan permainan edukasi keselamatan anak, yang terdiri dari lima tahap, dimulai dari pengumpulan data hingga menilai efektivitas produk. Hasilnya adalah permainan "ular tangga keselamatan" sebagai media edukasi keselamatan bagi anak. Kami menyajikan 12 gambar dalam permainan tersebut. Penelitian ini dilakukan pada tahun 2017. Dari hasil evaluasi permainan, rata-rata skor pre-tes adalah 37,9 dan skor pos-tes meningkat menjadi 65,5. Sehingga dapat dikatakan ada peningkatan pengetahuan tentang keselamatan sebesar 73,1%. Dapat disimpulkan bahwa permainan ini dapat meningkatkan pengetahuan anak tentang keselamatan.
Kata kunci: anak, permainan, keamanan

Abstract

Children are vulnerable to potential hazards from their environment because of their cognitive, psychological and social development are in immature stages. Formal education is still lacking in teaching safety concepts for children, hence a fun educational media for children is needed so that children can learn through child-friendly educative games. Because of that develop a fun child safety education model is important to improve children's knowledge on the importance of safety, so that children can easily understand how to implement safety values in their life. We used Research and Development (R & D) level 1 design to develop children's safety education game, which consisted of five stages, started from the data collection up to assess the product effectiveness. The result is a "snake and ladders of safety" game as safety education media for children. We presented 12 pictures in "snake and ladders of safety" game. This research was conducted on year 2017. Based on the game evaluation, the highest average pre test score was 37.9 and the average post test score increased to 65.5, hence there was an increase of knowledge on safety by 73.1%. It can be concluded that this game can increase children's knowledge on safety.
Keywords: children, game, safety

INTRODUCTION

Safety and accident are two kinds of different circumstances. Safety is always associated with positive conditions, such as joy, happiness, and prosperity. Accidents have negative connotations, such as sadness, sorrow, and suffering (Alkon, 2016). Nevertheless, both always go hand in hand even in coincidence and this is often less realized by humans. Changes that occur between these two different circumstances also occur so quickly when humans are falling asleep. Accidents can happen anytime, anywhere, to anyone, and in any activity (Mendoza, 2010; Jason, 2013).

Elementary school children fall into vulnerable group category because they are still in growth and development period. In this period, usually they move a lot because of their high spirit and energy. In addition, their curiosity about their environment is also high. Often time, when children play or do their activities, minor or major accident may occur. Most of this may even occur in school, hence the teacher is the one held responsible when the accident occurs to students in school. From this situation, teachers have an important role to prevent accidents in children, especially through education of safety behavior in children. In school, students are usually more conditioned both emotionally, socially and culturally. The introduction of safety culture can be done through simple ways, such as providing safety guidance within weekly assemblies on how to safely walk, cross, cycle, exercise, drive and what to do in emergency situations such as fire, earthquake and others (Kuschithawati, 2007).

The learning of safety or survival can be done through three channels, in example informal channels at home by parents, non-formal channels in the community by community or government institutions, and formal channels in schools by teachers (Ben, 2009).

Central Bureau of Statistics data in 2015 shows that the number of residents aged 0-14 years amounted to 69,857,406 or 27.34%. The number of children and adolescents in Indonesia is estimated to reach 70 million or 28%. The data shows that school-age children is a large group in the community. The number of school-age children in Indonesia is 6,354,625 or 78%.

Facts show that in general, all activities have risks that threaten the safety of self or others. Accidents can occur due to many factors, one of it is the lack of safety knowledge from early education. Lack of safety knowledge can potentially lead to accidents resulting in minor or severe injury, unconsciousness, life long disability or even death. In many cases, accidents that occur in children causes many injuries and even death (Health Profile of Central Java Province, 2012).

Most primary school children aged 5-13 years old still require supervision from adults; they have a habit of running suddenly and reckless in decision making (Hidayat, 2012). This is supported by a research conducted on Bernadus 02 primary school Semarang. According to data from School Health Program (UKS), the most common child injuries at school are falling from activities such as

walking, running out of the bathroom, exercise and running around the school area. Accident data from July 2015 to January 2016 revealed that 9 students sustained injury from falling and 5 must be brought to hospital due to fracture and sprain caused by slipping, running and falling. The highest number of injured students was from the fourth grade with 5 students (55.55%), the second was fifth grade with 3 students (33.33%) and the last was third grade with 1 student (11.11%) (Hutasoit, 2016).

While current formal education curriculum is very heavy in terms of content, child safety education at school is still minimal although teaching child safety could be done through formal education (through teaching materials, learning process in school, and learning facilities) or informal education from extracurricular activities. We felt that a fun safety education media for children is needed through which children can learn in a fun and interactive way through child-friendly educational games (Widowati, 2016). Hence, we developed Child Safety Education Model through child-friendly game.

Child friendly games are all forms of games designed to provide an educational experience or learning experience to their players, including traditional and modern Games given educational and teaching content (Turgut, 2016). Child friendly games can also mean a form of activity undertaken to derive pleasure from the way or educational media used in play activities, whether consciously or not, having educational content that can be useful in developing self-learners (Springer, 2010).

We aimed to develop a fun child safety education model through a child-friendly game to improve children's knowledge on the importance of safety, so that children can easily understand how to implement safety values in their life. Through this game, children would be able to recognize any potential hazards around them and to take the right precautions for it. This can reduce the risk of the accidents. In the long run, it can support the development of national safety culture.

METHOD

We used Research and Development (R&D) design until the fifth stage. This study consisted of five stages: **the first stage**is basic research and information collection through literature study and observation to identify potential hazards that is often found in children, as well as identify the type of games that have a potential to be developed. **The second stage**,"develop preliminary form of model" is the development of initial design models and game content. **The third stage** is model trial, that is testing the product draft to a few primary school children from grade 1 to grade 6 as sample. **The fourth stage** is the main model revision in the form of design improvement obtained from the assessment and input from children during the testing phase. **The fifth stage** is assessment

of product effectiveness, conducted in one of the leading private primary schools in Semarang City, Central Java Province, Indonesia.

We collected data through literature study and observation to identify the types of potential hazard affecting children. In addition, we also observed the type of games that have the potential to be developed and often played by Indonesian children. Interviews with a number of primary school children was also conducted at the evaluation stage since they are the primary target of the game. Primary school-age children must be exposed to safety education because it can be used as the foundation to build their thinking ability and enrich safety culture in their later life. Children's mental, physical, and intelligence development is centered at the age of 0-12 years. Those years are the golden age of child growth, both physically and psychologically. Therefore, appropriate knowledge in accordance to their proportional age is essential.

This research was tested on 1 class in a private elementary school in Semarang City, Indonesia. The class chosen was grade 3 and the total sample of 28 students. The sample technique used was purposive sampling, with the criteria: elementary students who were able to read fluently, were able to work in teams, could be mobilized well to perform certain game activities and get approval from the school management.

The data collected will be analyzed and utilized as inputs to develop child-friendly safety education models. The assessment of product effectiveness is conducted through pre test and post test results.

RESULTS AND DISCUSSION

Through observations and interviews, it can be inferred that the child-friendly game that have potential to be developed is "snake and ladders game" because it is cheap and liked by most Indonesian children. We increased the value of this game to become a "snake and ladder of safety" game. This game came with detailed instruction and designed to have 12 types of potential hazard pictures that are easily recognized by children. The potential hazards are as follows:

1. Electricity: presented as a child playing with electric socket.
2. Flame: presented as a child playing with stove fire.
3. Tools/machines/equipments: presented as a child playing with water dispenser.
4. Motor vehicles: presented as safety behavior while waiting for public transport/bus.
5. Sharp tools/equipments: presented as safety behavior while interacting with knife.
6. Sharp objects: presented as safety behavior while broken glass are scattered.
7. Animal: presented as the danger of snake venomous bite to a child while playing at the backyard.
8. Environment: presented as a child running on wet stairs.

9. Chemical: presented as a child playing with chemical liquid.
10. Radiation: presented as a child watching television at unsafe distance.
11. Dangerous game: presented as a child playing with dangerous gun with hard pellet.
12. Disaster: presented as safety behavior while dealing with small fire.

Below is picture of the board for "snake and ladders of safety" game.

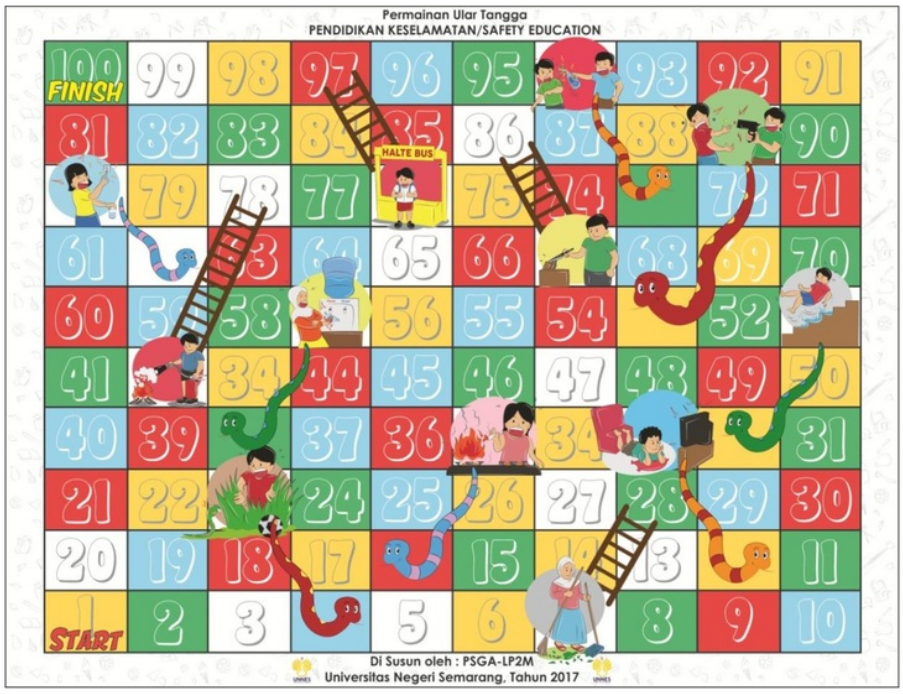

Figure 3. "Snakes and Ladders of Safety"game.

"Snakes and ladders of safety" have a total of 12 pictures consisting of: 4 pictures for positive/safety behavior and 8 pictures for negative/dangerous behavior. The details are as follows: negative/dangerous behavior pictures, consist of: playing with stove fire, running while descending a stair, shooting friend with hard pellet gun, touching electric socket using wet hands, playing with chemical liquid, playing in backyard bush while there is a snake watching them, playing with hot water from dispenser, and atching television from unsafe distance. Beside that the positive/safety behavior picture, consist of: sweeping broken glass and plate with footwear and appropriate equipment, extinguishing fire with Light Fire Extinguisher, putting knife in its seath, and waiting for bus in the shelter provided by government.

Examples of dangerous behaviors are presented twice as many as examples of safe behavior so that children can easily remember and quickly understand which dangerous behaviors should be avoided as it may endanger their own safety and environment.

After the product draft was completed, the product was tested on a sample of 1st to 6th grade primary school children to see whether the game is reasonably operational, easy enough and fun to play, and also to observe child's response while playing the game. Trial was conducted to obtain suggestions to improve product draft.

After the game improvement process was done, the next step was testing game effectiveness in a larger groupthat is at school. The effectiveness test was conducted as follows: before the children play the game, they were asked to do pre test to understand their prior knowledge about the concept of safety. After pre test, children were invited to play and discuss together through this educational "snakes and ladders of safety" game. Through the game, children were asked to explain each content of the pictures and expressed their opinion whether the picture presented is a safe act or not. After playing and discussion was done, children were asked to answer post test questions, to see whether the game improved their knowledge.

The effectiveness of this game can be seen from the results of pre test-post test. The average pre test score was 37.9 while the post test score was 65.5. Hence, it can be concluded that this game increased children's knowledge by 73,1%. In addition, we observed an increase in enthusiasm and activeness of all parties involved in this activity, namely: children, teachers and school management.

An effective educational media is a health promotion medium that can influence a person's interest, while continuously improving his knowledge. A health education media should convey information in hope that users would be influenced and gain knowledge from it. According to Cao (2014), respondents who have sufficient knowledge in safety education will have a better ability to identify places or objects that may pose potential hazard to themselves (Macpherson, 2010).

Every human being has different levels of knowledge. The level of knowledge starts from knowing, comprehension, application, analysis, synthesis and evaluation. The higher the level of a person's knowledge, the higher the ability of the individual in assessing material or object as a basis for their action. Factors affecting level of knowledge are education, age, environment and socio-cultural. The higher the level of education, age, and social status of a person means higher level of knowledge. In addition, there is a relationship between the level of knowledge and behavior. Children who have better knowledge will have a tendency for a better behavior (Diaz, 2017).

Education according to Raharjo (2016), by undergoing training process, the target will gain learning experience that ultimately lead to improvements in their behavior. Education is a structured facility provided by an organization to study about works related tothe knowledge, skills and behavior of the students. Not everyone can follow and education because education have certain requirements. The purpose of education is to make students more skilled in carrying out their duties and avoid potential dangers that exist around them.

CONCLUSION

We can conclude that "Snakes and ladders of safety"game provides 12 thematic pictures that consists of 4 pictures of positive/safety behavior and 8 pictures of negative/dangerous behavior.

Pictures presented in this game contain fundamental and important educational values for children. Through child-friendly educational game, children could identify potential safety hazards in their environment. The game is expected to help children understand easily and quickly what behaviors they should avoid and do to maintain the safety of themselves and the environment, and in the end prevent them from any potential injury.

From average pre-test score (37,9) and post test score (65.5), we can infer that the game provided positive contribution in safety knowledge of children by 73.1%.

According to Widowati (2018a), Competency improvement can be reached by training or enrichment on the existing materials to internalize safety culture in all students as early as possible. Moreover, Widowati (2018b) teacher competency in applied science of safety must be enhanced. Because of that schools should be able to integrate safety education in every teaching material, especially in thematic lectures, laboratory-and-field-activities-related lectures, or on local material contents and the teacher competence itself. In addition, teachers and school management can use this child-friendly educational game media to fill children's after-school free time and integrate it with various extracurricular activities so as to synergize positively in improving children's safety knowledge. Increasing knowledge using various methods is very important given including to children, because according to Wijaya (2014) said that there is a significant correlation between knowledge and attitude, knowledge with activities and attitudes with activities.

REFFERENCE

Adi, Banu Setyo. 2011. Pendidikan Keselamatan di Sekolah. PPSD FIP UNY.

Alkon, A., Rose, R., Wolff, M. et al. 2016. Health and Safety Checklist for Early Care and Education Programs to Assess Key National Health and Safety Standards. *Matern Child Health J,* 20 (1): 114-127.

Ben-Arieh, A., Mc Donell, J. & Attar-Schwartz, S. 2009. Safety and Home–School Relations as Indicators of Children Well Being: Whose Perspective Counts? *Soc Indic Res,* 90 (3): 339-349

Cao, ZJ. Chen, Y. & Wang, SM. 2014. Health belief model based evaluation of school health education programme for injury prevention among high school students in the community context. *BMC Public Health*, 14: 26

Diaz-Quijano, F.A., Martínez-Vega, R.A., Rodriguez-Morales, A.J. 2017. Association between the level of education and knowledge, attitudes and practices regarding dengue in the Caribbean region of Colombia. *BMC Public Health*, 18 (1): 143

Hidayat, Edwin, 2012, *EvaluasiTipikal Zona Selamat Sekolah pada Jalan Arteri Primer yang Masuk Wilayah Perkotaan, Jalan Jembatan*, 26 (1): 47-57.

Hutasoit, Fitri Evanti. 2016. Gambaran Pengetahuan Anak Sekolah Dasar tentang *Safety Education* (Studi Kasus di Sekolah Dasar Swasta Pangudi Luhur Bernadus 02 Semarang), IKM FIK UNNES.

Jason, L., Clarfield, S. & Cowen, E.L. 2013. Preventive intervention with young disadvantaged children. *Am J Commun Psychol,* 1 (1): 50-61

Kuschithawati, Susy, dkk, 2007, Faktor Resiko Terjadinya Cedera Pada Anak Usia Sekolah Dasar. *BKM*, 23 (3): 1[illegible].

Macpherson, A.K., Jones, J., Rothman, L. et al. 2010. Safety standards and socioeconomic disparities in school playground injuries: a retrospective cohort study. *BMC Public Health,* 10: 542

Mendoza, J.A., Watson, K., Baranowski, T. et al. 2010. Validity of instruments to assess students' travel and pedestrian safety. *BMC Public Health,* 10: 257.

Profil Kesehatan Provinsi Jawa Tengah, 2012.

Raharjo, B. B., Handayani, O. W. K., Nugroho, E., & Hermawati, B. 2016. Local Potentials as Capital for Planning Nutrition Programs for Urban Fringe Areas in Developing Countries. *Pakistan Journal of Nutrition*, 15 (12): 1026-1033

Springer, C. & Misurell, J.R. 2010. Game-Based Cognitive-Behavioral Therapy (GB-CBT): An Innovative Group Treatment Program for Children Who Have Been Sexually Abused. *Journ Child Adol Trauma,* 3 (3): 163-180

Turgut, T., Yaman, M. & Turgut, A. 2016. Educating Children on Water Safety for Drowning Prevention. *Soc Indicators,* 129(2): 787-801

Widowati, Evi, dkk, 2016, Peningkatan Pengetahuan Anak Tentang Konsep Anti *Bullying* Melalui Permainan Ramah Anak Sebagai Upaya Pencegahan Kekerasan Terhadap Anak Di Sekolah, PSGA LP2M UNNES.

Widowati, Evi., Koesyanto, Herry., Sugiharto. 2018. The Application of Safety Education in Primary School Directorate in Indonesia. Journal of Education and Learning (EduLearn), 12 (3): 487-492 ISSN: 2089-9823 DOI: 10.11591/edulearn.v12i3.7487.

Widowati, Evi., Koesyanto, Herry., Sugiharto. 2018. Application of Safety Education on Junior High School Teaching Material. The 4th International Seminar on Public Health Education (ISPHE 2018), Advances in Health Science Research, Vol. 12. Published by Atlantis Press.

Wijaya, I. M. K., Agustini, N. N. M., MS, G.D.T. 2014. Pengetahuan, Sikap dan Aktivitas Remaja SMA dalam Kesehatan Reproduksi Di Kecamatan Buleleng. Jurnal Kesehatan Masyarakat (KEMAS), 10 (1): 33 – 42. http://journal.unnes.ac.id/nju/index.php/kemas.

Artikel KEMAS

ORIGINALITY REPORT

10%	9%	7%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Elly Hanson. "Promising Therapeutic Approaches for Children, Young People and their Families Following Online Sexual Abuse", Wiley, 2017 Publication	1%
2	arizona.openrepository.com Internet Source	1%
3	media.neliti.com Internet Source	1%
4	acqol.deakin.edu.au Internet Source	1%
5	cbtrust.org.uk Internet Source	1%
6	www.labome.org Internet Source	1%
7	onlinelibrary.wiley.com Internet Source	1%
8	lp2m.unnes.ac.id Internet Source	1%

9	Orion Stewart, Anne Vernez Moudon, Charlotte Claybrooke. "Multistate Evaluation of Safe Routes to School Programs", American Journal of Health Promotion, 2014 Publication	1%
10	bmcpublichealth.biomedcentral.com Internet Source	1%
11	Leonard Jason. "A preventive educational program for young economically disadvantaged children", Journal of Community Psychology, 04/1974 Publication	<1%
12	jurnal.pusjatan.pu.go.id Internet Source	<1%
13	link.springer.com Internet Source	<1%
14	Lunsford, S. K., and William Slattery. "An Interactive Environmental Science Course for Education Science Majors", Journal of Chemical Education, 2006. Publication	<1%
15	repository.ugm.ac.id Internet Source	<1%
16	"Researchers at Ruhr University Have Reported New Data on Social Science	<1%

	(Educating Children on Water", Science Letter, Dec 9 2016 Issue Publication	
17	www.safetylit.org Internet Source	<1%
18	Alicia Swartz, Tina Collier, Chelsea Anne Young, Eddie Cruz et al. "The effect of early child care attendance on childhood asthma and wheezing: A meta-analysis", Journal of Asthma, 2018 Publication	<1%
19	"Handbook of Child Well-Being", Springer Nature America, Inc, 2014 Publication	<1%

Exclude quotes	Off	Exclude matches	Off
Exclude bibliography	Off		