

EFFECT OF EDUCATIONAL GAME

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Effect of educational game usage in increasing self-protection capabilities at Madrasah Ibtidaiyah Alwahyu Jakarta[☆]



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Abstract

Objective: The purpose of this study was to find out the effect of educational game usage in increasing self-protection capabilities at Madrasah Ibtidaiyah Al-Wahyu Cibubur.

Method: The method of this research used Quasi Experiment research with descriptive analytic with one group pretest and posttest design. The population in this research was all the students in 1st grade amounted to 46 students, the technique used to collect the sample for this research was the total of sampling at Madrasah Ibtidaiyah Al-Wahyu Cibubur.

Result: From the result of Mc Nemar data processing stated that there was an effect of the educational game usage in increasing self-protection capability with a *p-Value* ($p = 0.000$).

Conclusion: Educational game is capable in increasing self-protection capability. This media can be applied to the children in other schools and as the reference for the further research.

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Introduction

Violence against children is an endless phenomenon. Cases and victims always increase every year. According to data from the World Health Organization (WHO) in 2010, around 20% of women and 5–10% of men in the world had experienced sexual violence in childhood. According to the National Sex Offender Public Website (NSOPW), 9.3% of child abuse cases in 2012 were classified as sexual harassment and in 2012, 62,939 cases of child sexual abuse had been reported.¹ According to the United Nations International Emergency Fund (UNICEF) (2014), the data revealed that around 120 million children worldwide or more than 100 children have been the victims of sexual abuse under the age of 20.¹

The game environment has great potential to support a deep learning experience. Learning can be defined as "actions, processes, or experiences to gain knowledge or skills".² One of the things that can be done to prevent sexual abuse in children is to provide sex education to children from an early age.³ All this time, sex education for children at early age is considered taboo among the society. Parents assume that sex education is inappropriate for young children, whereas with sex education given on early age is very influential in the lives of children when they enter adolescence, especially the children nowadays are more critical in terms of questions and behavior as they have great curiosity. Sex education from the family is one alternative to provide children with information about sex, health, and reproductive matters correctly.⁴

Lestari and Prasetyo, (in Hapsari, 2016)⁵ stated that children are ready to learn about sexual education when they have started asking questions about sex. Andika⁶ also said that prevention of sexual violence in children can be done by building a defense mechanism to provide knowledge and appreciation for their body through early sexual education, to build an effective two-way communication, to build trust on parents, and to build courage and self-resilience.⁷

One form of learning media is in the form of computer-based educational game. Game-based learning (GBL) and gamification can improve the sexual health education of adolescent students.⁸ Educational games excel in several aspects when compared to conventional learning methods. One significant advantage is the existence of animation that can improve memory so that children can memorize what they have learned for a longer time compared to conventional teaching methods.⁹ Strategies for preventing sexual violence in the evaluation literature are short,

psycho-educational programs that focus on improving knowledge or changing attitudes, none of which shows evidence of the effectiveness of sexual violence behaviors using rigorous evaluation designs, playing violent video games shows a higher level of aggressive behavior compared to those who don't.¹⁰

Methods

Design

This research is a quasi-analytic experiment research with one group pretest and posttest design. The one-group pretest–posttest research design is a quasi-experimental research design carried out in one group without a comparison or control group. In this design measurements were carried out twice, the first measurement was carried out in advance (pretest) before acceptance (treatment) and the second measurement (posttest) was done after training or intervention. Fig. 1 shows scheme of the pre-experimental research model with the one-group pretest–posttest design.

Information

O1: Results of initial measurement of knowledge about the ability to protect themselves before intervention/treatment (pretest)

X: Provision of intervention or treatment in the form of health promotion by providing educational games for Children safety

O2: The results of the second measurement of knowledge about the ability to take care of themselves after an intervention/treatment (posttest)

Variables

The population in this study were all grade 1 students at Madrasah Ibtidaiyah Al-Wahyu Cibubur East Jakarta in 2019 totaling 46 students, the sampling technique using total sampling, carried out at the Ibtidaiyah Al-Wahyu Madrasah Panglayungan Foundation located at Jl. Madrasah Rt.004/014 No. 24 Kelurahan Cibubur, East Jakarta in 2019.

Inclusion criteria are determined age 6 years, where at this age children begin to learn physical skills and exploration of the environment without the help of their parents and are able to absorb information that will help their intellectual development.¹¹

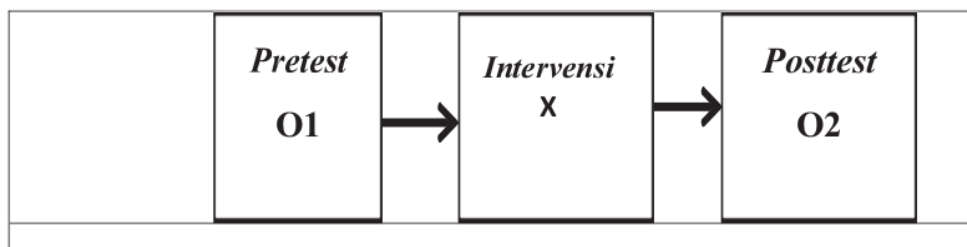


Figure 1

Table 1 Frequency distribution of knowledge about self-protection capabilities before and after the health promotion using educational media games.

Knowledge	Frequency <i>n</i>		Presentation %	
	Before	After	Before	After
Poor	35	10	76.1	21.7
Good	11	36	23.9	78.3
Total	46	46	100	100

Table 2 Students knowledge pretest and posttest about self-protection.

Knowledge	Pretest		Posttest		<i>p</i> value
	<i>n</i>	%	<i>n</i>	%	
Poor	35	76.1	10	21.7	0.000
Good	11	23.9	36	78.3	
Total	46	100	46	100	

Data analysis

Analysis of the data in this study is to use the McNemar Test. McNemar test is used for research comparing before and after events/treatments where each object is used to control itself. This test is carried out on 2 related samples, the measurement scale is nominal (binary response) and for the 2×2 data crosstabulation. For the McNemar test, the values of the data must be categorized. Or in other words the McNemar test uses nominal data.

Results

Based on Table 1 from the results of the research on the knowledge of self-protection before the health promotion using educational game media, from 46 respondents before the intervention there were 35 (76.1%) respondents had poor knowledge and 11 (23.9%) respondents had good knowledge. And then based on the results of research on the knowledge of self-protection after the health promotion using educational game media, from 46 respondents after intervention by revealing educational games there were 10 (21.7%) respondents with poor knowledge and 36 (78.3%) respondents with good knowledge.

Based on Table 2 from the results of research on the knowledge of the first grader students on self-protection capabilities in 2019, from 46 respondents before the intervention of educational games there were 35 (76.1%) respondents with poor knowledge and 11 (23.9%) respondents with good knowledge. After the intervention of giving educational games, from 46 respondents, there were 10 (21.7%) respondents with poor knowledge and 36 (78.3%) with good knowledge. These results showed an improvement on respondents' knowledge about self-protection capabilities using an educational game. The results of the statistical test using the Mc Nemar test obtained a *p* value of 0.000,

which means that the provision of effective educational games has a significant effect on increasing respondents' knowledge.

Discussion

Knowledge of self-protection capabilities before and after the health promotion health using educational media games

The results of the study showed an improvement on the respondents' knowledge, before the intervention from 10 (21.7%) to 36 after the intervention (78.3%) using educational game media. This means that there is a significant difference in student knowledge (*p* value 0.000).

Based on the theory, health promotion activities aimed at predisposing factors are in the form of providing information due to the lacking of knowledge is also caused by a lack of information, and notifications that cause awareness. The purpose of these health promotion activities is to provide or to improve the knowledge about health, which is essential for human beings, so that it will affect the occurrence of healthy behavior in them.

Educational games for improving the knowledge of self-protection capabilities will help children to clarify some of the understandings they already have about how to create protection against acts of violence. According to Clark education can support the educational process. Educational games excel in several aspects when compared to conventional learning methods. One significant advantage is the existence of animation that can improve memory so that children are able to memorize the subjects for a longer time.

Conclusion

The analysis of the data from this study concludes that there is a significant effect of the use of educational games on improving the knowledge of self-protection capabilities at Madrasah Ibtidaiyah Al-Wahyu, Suggestions in this study are expected for the school in improving students' knowledge, so that they are able to continue to present the health promotion not only given by teachers, but the school should provide information about "Knowledge of Self-Protection Capabilities" by posting health articles, and using creative and innovative media and creating educational games.

Conflict of interest

The authors declare no conflict of interest.

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