

Game Learning based Android for Trauma Healing in Post Disaster Children in Disaster Area in Banyumas Regency

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Abstract

The purpose of this study is the use of Android-based learning games for trauma healing in disaster areas after disasters. Referring to the objectives to be achieved, this research program is designed with a "Qualitative Research" approach, which is a study that describes the behavior of certain people, events or places in detail and in depth. Research results: this research was conducted in Klahang village, Sokaraja District, Banyumas Regency. Where there was a fire accident at the Bakso stall next to the Al Quran Education Place (AEP) during the learning process. This makes the children traumatized. There are 34 children who are studying at AEP. Of the 34 children there were 14 children who were used as research respondents. Trauma experienced there are three levels, namely mild, moderate and severe. After requesting a research permit from the Village Head and the local RT Head, the research began from 18 August to 18 September 2019. The data collection process began from 24 August to 14 September 2019 at the AEP teacher's home. The observation process was carried out for 7 days. Conclusion: this learning game is effective for overcoming learning in disaster areas and for reducing trauma in post-disaster children

Keywords: Game Learning based Android, Trauma Healing Childrens, Disaster Area

1. Introduction

Indonesia is the country most frequently affected by disasters. Indonesia is situated in a geologically unstable area called the Pacific Ring of Fire. Since 2000, Indonesia has experienced over 30 major earthquakes, almost 50 floods and landslides, seven volcanic eruptions, and at least one disastrous tsunami (Asian Disaster Reduction Center, 2010). The risk index for a tsunami occurring in Indonesia in 2020 was 9.7 out of a maximum ten points. Indonesia is an archipelagic country made up of around 17 thousand islands and sits on the Pacific "Ring of Fire" (Hirschmann, 2010). The occurrence of the disaster resulted in the destruction of infrastructures, casualties and trauma. By disrupting physical infrastructure and leaving a significant amount of personal and psychological residue from people in the community Work (Adams & Adams, 1984; Ursano, McCaughey, & Fullerton, 1994; Wicke & Silver, 2009).

The impact of the disaster is greater exposed to danger. Benefits are losses for humans and their physical assets like property and infrastructure (ADB, 2019). The impact of a disaster then arises not only at the physical level in Indonesia the destruction that gives rise to, and at the individual level the difficulties that are caused, but also at the social level the qualitative changes increase (Shaskolsky, 1965: 36-37). Disasters and other large-scale traumatic events often occur outside of matters that directly affect the wider community (Seyle, et al. 2013: 34).

After the disaster, the refugee camps were filled with disaster victims. Disaster victims are traumatized by the loss of loved ones, property, destruction of their homes and rice fields / gardens that have been their livelihoods. Conditions in refugee camps that are not appropriate to add to the more severe mental stress. The longer time spent in evacuation, has an impact on the number of refugees experiencing psychological disorders.

Indonesia is the country most frequently affected by disasters. The occurrence of the disaster resulted in the destruction of infrastructures, casualties and trauma. After the disaster, the refugee camps were filled with disaster victims. Disaster victims are traumatized by the loss of loved ones, property, destruction of their homes and rice fields / gardens that have been their livelihoods. Conditions in refugee camps that are not appropriate to add to the more severe mental stress. On the other hand, a disaster can cause prolonged trauma not only to adults but also to

children. Children who directly experience, feel and witness the effects of a disaster will experience trauma. The trauma experienced involves a very serious mental condition such as insomnia, excessive fear, overwhelmed anxiety, withdrawal, do not want to be abandoned by parents by showing a high dependency toward adults, fear of entering the house, not wanting to sleep in the house fuss, psychosomatic, stress, depression and so on. Traumatic conditions in children are classified from mild to severe levels. For this reason, efforts should be made to reduce trauma to children after a disaster.

Utilization of technology will help the process of trauma healing in post-disaster children. One technology that is utilized is the use of mobile learning for learning. The use of smartphones, iPads, Playbooks, tablet PCs and the like is more widely used today for various reasons and choices than the PC (Personal Computer) that is at home. Various reasons become a magnet for all people in its use. Light, easy to carry, practically the main reason for its use. Utilization of mobile learning to reduce trauma can be made in a game format. Game is a form of activity in which participants involved in it are bound by the rules that have been set to achieve a goal. Mobile learning is made packaged in a game format according to the characteristics of children who like to play so the concept of playing while learning will be more striking. Many game features are not only for playing entertainment, but there are many games to hone the power of thought and logic that can introduce material to be more interesting to be accepted and understood, especially by children. The formulation of the problem in this study is how to use Game learning based Android for trauma healing in disaster areas in Banyumas Regency?

2. Literature Review

2.1. Android Based Game for Trauma Healing

The rapid development of science and technology (IPTEK) has given tremendous changes to the world of education. According to Suparman (2014: 56), the development of science and technology changes the face and instructional behavior towards accelerating the process of increasing the quality and effectiveness as well as its reachability. It is further stated that the development of science and technology and the flow of globalization need to enter at the practical level of the instructional system without having to leave the instructional philosophy, which is to facilitate the interaction of students with learning resources to achieve useful competencies to solve various problems. A system is a perceived whole where the elements "hang together" because these elements continuously influence each other from time to time and operate towards a common goal (Senge, 2010: 108).

In the last two decades, the latest technology has been used as a tool in education (Suparman, 2014: 188). Advances in Information and Communication Technology (ICT) allow flexible application of the concept of lifelong learning to secure human resources. ICT changes the mindset and patterns of technology use as well as people's conceptions of technology itself. Media serves to support interaction as well as a means of communication. Games are often accused of having a negative influence on children. In fact, games have positive functions and benefits for children, including children getting to know computer technology, lessons to follow directions and rules, practice solving problems and logic, training motor nerves and spatial skills, communicating between children and parents when playing together, and providing entertainment. In fact, for certain patients, game play can be used as a healing therapy (Henry: 2010). Learning is an activity of educators or teachers programmed through instructional design so that students can learn actively and put more emphasis on the learning resources provided. The term android refers to an operating system for linux-based mobile devices which includes the operating system, middleware, and applications. Android provides an open platform for developers to create their applications. Android is an operating system that powers more than one billion smartphones and tablets Android is an operating system that runs on today's smartphones and adjusts specifications in the low-end to high-end class. Almost all vendors currently develop their products with the Android operating system, because the demand is increasing sharply. Android is a Linux-based operating system for mobile phones such as smartphones and tablet computers. Android provides an open platform for developers to create their own applications for use by a variety of mobile devices.

2.2. Childrens Trauma

Mental injury or sometimes also called trauma can occur to everyone. When reaching adulthood, the ability to deal with mental wounds will be more complete and complete, so that mental injuries that occur can heal quickly or even heal completely. Trauma is defined as any event involving an exposed individual to an incident where injury or death is a possibility and in which feelings of terror and hopelessness are generated (Everly et al, 2008).

Bryce (2001: 7) says that traumatic (distress) on the other hand, is potentially very damaging and can take away from people's physical and mental health, and sometimes even life itself. Furthermore, according to APA (1994: 4) a traumatic event occurs when an individual experiences, witnesses, or is faced with an event that involves death, serious injury, or threats to the physical integrity of oneself or others. This traumatic event is in line with the concept of Id or Das Es (biological aspect) put forward by Freud in Feist & Feist (2008: 29) which states that Id is the most basic psychological layer, in which there are innate instincts and repressed desires. . The id is also driven by a destructive tendency towards self-destructive things. Furthermore, Freud's theory of anxiety, Freud describes anxiety as a unit without objects because it cannot point to the source of fear or a specific object that causes that fear. Freud considered that anxiety is fundamental to the development of neuritic and psychotic influences.

Trauma is a mental state or abnormal behavior as a result of mental stress or physical injury. In addition, trauma can also be interpreted as a wound caused by external factors. The existence of a disaster can cause prolonged trauma not only among adults but also children. Children who directly experience, feel and witness the impact of a disaster will feel traumatized. The trauma experienced involves very serious mental conditions such as insomnia, excessive fear, anxiety, withdrawal, not wanting to be abandoned by parents by showing a high dependence on adults, fear of entering the house, not wanting to sleep in the house, fussy, psychosomatic, stress, depression and so on. Traumatic situations in children are classified from mild to severe. For this reason, it is necessary to take efforts to reduce trauma to children after a disaster.

3. Methods

As an "independent" approach outside of the approach that uses the positivism and postpositivism paradigms that produce a quantitative and qualitative research axis (Syamsudin and Damaianti, 2015), there are two methods used in the implementation of research and development, namely descriptive-qualitative and improftive-evaluative research. (Sukmadinata, 2016; Rumaolat et al., 2019). The descriptive method was used in the initial research to collect data regarding the objective conditions of the research background, namely the situation, location, environment, condition of the child and the conditions of the teaching and learning process. This study uses a qualitative approach, which is a study that describes the behavior of people, events or specific places in detail and in depth. Qualitative methods are considered as research procedures that can be expected to produce descriptive data, in the form of written or oral words from a number of people and observed behavior.

This study also includes qualitative naturalistic research, the term naturalistic shows that the implementation of research occurs naturally as it is, in normal situations that are not manipulated by the conditions and conditions and emphasizes the description naturally. To describe this learning process, researchers present field events from data in the form of descriptions or sentences so that they are descriptive. The form of this research is a descriptive qualitative research that aims to provide a detailed, complete and in-depth explanation of social phenomena that are related to research. The form and type of this research will be able to capture various qualitative information in a descriptive, accurate and complete manner, in which case it is more valuable than just a statement of the number or frequency or calculation in the form of numbers.

4. Results and Discussion (12 font)

4.1. Research Result

Preliminary study activities carried out to obtain information about field conditions related to research. This is done so that the research results are in accordance with the research objectives. The preliminary study was carried out through information gathering from the Regional Disaster Management Agency (RDMA) Banyumas Regency regarding the occurrence of disasters in the Banyumas Regency. From January to August, the most common disasters were drought and fires. Considering at this time is the dry season. For that period, there were no major disasters such as floods, landslides or other disasters.

The learning game used to retrieve research data is the ECAG (Educational, Creative and Attractive Game) games. This game is an android-based game that is designed as a learning medium after a disaster as well as to overcome trauma in post-disaster children. Making this game considering that Android-based cell phone is already owned by all circles. In the event of a disaster that results in damaged facilities and infrastructure. The game used in this research can be seen at figure 1.



Figure 1. The PEKA games.

The research activity took place in the village of Klahang Rt. 2 Rw.6 where there was a fire at the meatball stall next to the AEP. At the time of the incident ongoing teaching and learning process at AEP, causing trauma to children. After getting information from the RDMA Banyumas Regency, the team headed for the location in Klahang Village RT.2 Rw. 6. The location of the fire is close to the house of the Klahang Village Chief. Requesting the research team's permission to coordinate. To request a research permit, the research team headed for the office of the Klahang Village Chief on August 17th. But the office was quiet because everything was being held in the field in preparation for the August march on August 18, 2019. For this reason, the research team visited the Head of the Klahang Village, Mr. Sulistiyono. The arrival of the research team was to discuss the purpose of the research in Klahang village. The village head of Klahang welcomed the arrival of the Research Team. He strongly supports the research activities carried out. Then he invited the research team to meet the The Head of The Neighborhood Association (NA) 2 Community Pillars (CP) 6 because the research location is in the region. After saying goodbye, the Research team headed for the house of NA.2 CP.6.

The Head of NA 2. CP 6, Pak Tarjo, invited the Research Team to conduct research activities. He is very enthusiastic because the educational game is expected to encourage children to be able to learn from playing cellphones not only for playing games and watching YouTube. For children who are used as research samples, he invited the research team to be able to coordinate with Ustadzah who teaches, where the house is next to the house of the RT head. The research team said goodbye to meet with Ustadzah who was teaching at AEP. Then the research team visited the Ustadzah house, Mrs. Titi, conveyed the purpose of the visit. He welcomed happily because his son could also join. To facilitate the research activities, the location of the study was conducted at Ibu Titi's house, considering that the AEP location was still in a repaired condition, there was a part of the roof which was burned because it was close to the AEP. In accordance with the agreement, the research activities began on August 25, 2019 starting at 3 pm before the AEP activities were carried out at 4 pm. The number of children in AEP is 35, but there are only 14 children in accordance with the age range of 7-12 years. The data sample presented at table 1.

Table 1. Sample Research's Data

No.	Name	Age
1.	Resp1	12
2.	Resp2	9
3.	Resp3	10
4.	Resp4	12
5.	Resp5	9
6.	Resp6	10
7.	Resp7	8
8.	Resp8	8
9.	Resp9	9
10.	Resp10	10
11.	Resp11	9
12.	Resp12	8
13.	Resp13	10
14.	Resp14	9

For research activities, all children are asked to bring a cellphone to install the ECAG game. But apparently not all parents allow children to carry cellphones. So to overcome this problem use the cellphone of Ms. Titi and her

husband. From observations on all children used as research samples, researchers divided into 3 levels of trauma, namely mild trauma, moderate trauma and severe trauma. This is to facilitate researchers in approaching children so that they are not increasingly traumatized. There are 4 children who suffered severe trauma, 5 moderate trauma and 5 minor trauma. Children who suffered severe trauma because at the time of the incident were near a meatball stall that exploded and then caught fire. A big explosion surprised them. Since the incident they were afraid to hear a loud noise and see a big fire. For children who experience minor trauma, they only fear if there is a loud noise.

Research activities carried out for 7x to make it easier for researchers to observe the effectiveness of learning game based android programs to reduce trauma to children. From the research data retrieval obtained data as describe at table 2:

Table 2. Data Description

Name	Time							Score						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Resp1	4.27	4.1	3.2	2.7	2.3	2.4	2.3	70	95	100	95	100	100	100
Resp2	4.17	3.7	3.3	2.3	2.2	2.3	2.2	95	90	100	100	100	100	100
Resp3	4.58	3.9	3.1	2.3	2.5	2.2	2.1	100	100	100	100	95	100	100
Resp4	4.46	4	3.2	2.4	2.3	2.1	2.4	100	95	100	95	100	100	90
Resp5	7.06	6.1	5.4	3.4	3.6	3.3	3.1	90	55	40	75	80	80	80
Resp6	5.56	5.5	4	3.1	4.1	3.4	3	55	70	80	90	95	100	100
Resp7	4.26	3.8	3.2	2.6	2.2	3.2	2.8	90	75	85	95	100	75	90
Resp8	4.52	3.9	3.2	2.7	2.1	2	2.1	30	50	70	90	100	100	100
Resp9	4.29	3.8	3.1	2.2	2.1	2.1	2.2	90	95	100	95	100	100	100
Resp10	4.42	3.7	2.9	2.1	2	2.1	2.1	75	80	90	100	100	100	95
Resp11	4.23	6.4	5.8	4.3	3.2	2.7	3.2	75	80	90	100	100	100	80
Resp12	7.51	6	5.2	4.2	3.5	3	3.2	50	60	75	90	100	100	95
Resp13	7.39	6.2	5.6	3.5	2.6	2.3	2.4	90	95	95	100	100	100	90
Resp14	4.23	3.7	3	3.1	3.1	3.4	3	100	95	100	95	100	95	95

a) Implementation of the first day

In accordance with the agreement, the activity was held on Sunday, August 24, 2019 at 15.00 WIB at Ustadzah Titi's house. There were a total of 14 children who became research respondents. The research location is still in one RT with the location of the fire. The location of this research was chosen to focus more on changing the behavior of children who have experienced trauma. The study was assisted by 2 students to observe children's behavior.

The researcher and the team introduced themselves, approaching the children by greeting them one by one, stroking their heads and backs. Trying to give a sense of security and comfort because it's the first time meeting. Children tended to be shy when asked for their name, age and class. First of all, the researcher conveyed the intention of coming and then demonstrated the games on the cellphone so that the children knew and could play the game. Most parents of children in Klahang village limit their children to play on cellphones. If a child holds a cell phone in the form of a watch, it is only for the purpose of calling their parents to ask to be picked up when they come home from school or the Koran. For this reason, the researchers prepared 6 cellphones so that children could play games. The pattern of play is 1 person plays the game, 1 person records the time and score obtained. Timing using a timer or stopwatch so that it is more accurate. The type of games can be seen at figure 2.



Figure 2. Documentation of Research Data Collection Activities

To make observations easier, the researchers divided into 7 groups, where each group contains 2 people. To observe the extent to which games can reduce trauma to children who are victims of post-disaster disasters, researchers were assisted by 2 volunteers, namely Yunita and Anisa and Mrs. Titi and her husband. The speed with which they finish the game and the number of scores they achieve can be used as a reference to see how effective the program can be in helping children reduce their trauma by playing learning games. When the children played the game, the volunteers gave explanations about how to play the game. After the children played the game, the researcher asked their opinion about the games they played. Of all the children all answered fun but it was rather difficult to answer the questions and a bit difficult with the command to run the game. The activity lasts 1 hour so that the children do not feel depressed and bored. After the activity, each child received a package containing healthy snacks. The chart to illustrate the time velocity and the score obtained from each respondent presented at figure 3.

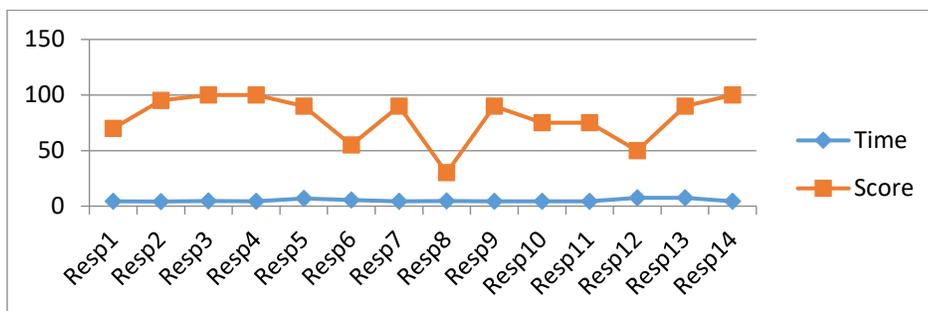


Figure 3. Chart Data of The First Day

b) The second day

The second meeting was held on Sunday, August 25, 2019 at 16.00 WIB, still at the same place. Still the same as the first meeting, to make observations easier, the researchers divided into 7 groups. Volunteers observe the extent to which learning games can reduce trauma to child victims of post-disaster disasters. Each volunteer is tasked with calculating how fast the children can complete the game and how many scores they achieve as well as changes in children's behavior.



Figure 4. Documentation of the second day of activities

At this second meeting as it seen at figure 4, there were already visible differences in the faces of the children who came. Children are more cheerful, want to joke with their friends, want to communicate with researchers and volunteers. The child who was severely traumatized had arrived alone without his father's company. When the activity started, the volunteers divided the assignments to the children, some were in charge of recording the results, some were in charge of counting the time playing games on a timer so that all the children were involved in the activity. After the children played the game, the researchers asked their opinion about the games they played, of all the children answered that it was fun and interesting. After the activity, each child received a package containing healthy snacks. The chart to illustrate the time velocity and the score obtained from each respondent presented at figure 5.

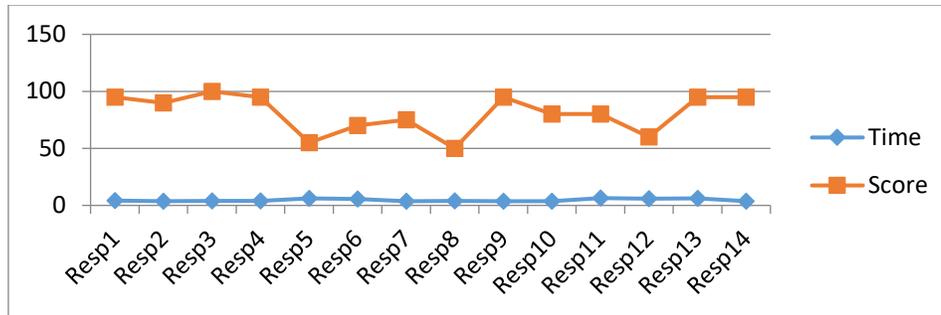


Figure 5. Chart Data of The Second Day

c) The implementation of the third day

The third learning activity was held on Saturday 30 August 2019 at 16.00 WIB. The activity was opened by volunteers, asking how they were, asking to sing. Volunteers give quizzes that must be answered and those who answer correctly will be rewarded. The atmosphere was very cheerful, after several children answered correctly, the volunteers asked each child to enter their respective groups. The volunteer records all the activities in the group that he observes. Children carry out activities as instructed as it presented at figure 6



Figure 6. Documentation of the third day of activities

The researcher observed by approaching one group at a time. Trying to get closer to the children, by saying hello and smiling, occasionally stroking their backs. The children seemed enthusiastic about playing the game. Every now and then they joke and laugh out loud with their friends, much better than at the first and second meeting. They have shown joy and happiness. Today some people seem to be carrying racket to play badminton. Looks like they had made an appointment to play badminton after the activity. After the activity, each child received a package containing healthy snacks prepared by the researcher. The chart to illustrate the time velocity and the score obtained from each respondent presented at figure 7.

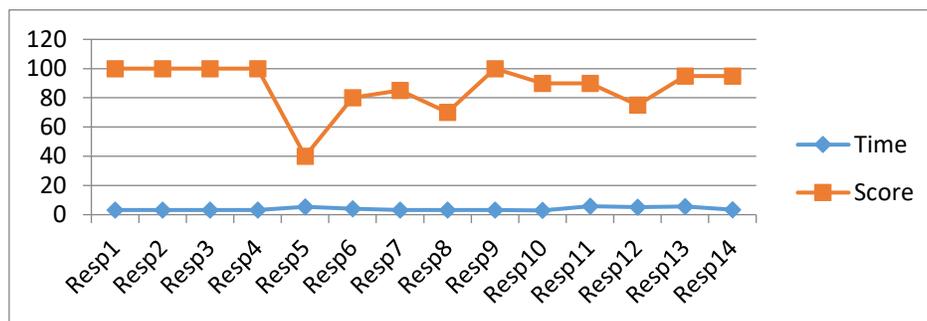


Figure 7. Chart Data of The Third Day

d) Implementation of the fourth day

The fourth day of activities will be held on Sunday, September 1, 2019 at 16.00 WIB. The activity was opened by volunteers, volunteers asked how the children were then invited them to sing and play riddles. Then each child entered into their respective groups. The volunteer records all the activities in the group that he observes. Children carry out activities as instructed. The researcher observed by approaching one group at a time. The children are familiar with volunteers and researchers. As it can be seen at the figure 8.



Figure 8. Documentation of the fourth day of activities

The children seemed enthusiastic about playing the game. The children look compact and there is no distance. They encourage every child who is playing the game. After the activity, each child received a package containing healthy snacks. The chart to illustrate the time velocity and the score obtained from each respondent can be seen at figure 9.

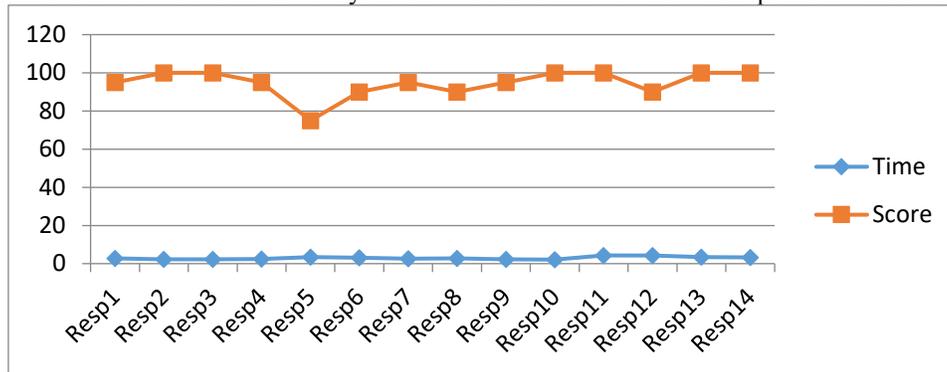


Figure 9. Chart Data of The Fourth Day

e) The fifth day

The fifth learning activity is still in the mosque, the children arrive on time. The fifth day is held on Saturday 7 September 2019 at 16.00 WIB. The activity was opened by volunteers, the volunteers asked how the children were then invited them to sing and play guesswork, the atmosphere was very cheerful. Then each child entered into their respective groups. The volunteer records all the activities in the group that he observes. Children carry out activities as instructed. The researcher observed by approaching one group at a time. The children are familiar with the volunteers and researchers, occasionally the children tease volunteers. Today the children looked very enthusiastic about playing the game because they were competing to be able to finish the game quickly and correctly. It can be seen on the figure at 10.



Figure 10. Documentation of the fifth day of activities

The provoking voices from them were very boisterous as the children were trying to show their abilities. Volunteers and researchers are very pleased with these advances. After the activity, each child received a package containing

healthy snacks. The chart to illustrate the time velocity and the score obtained from each respondent can be seen at figure 11.

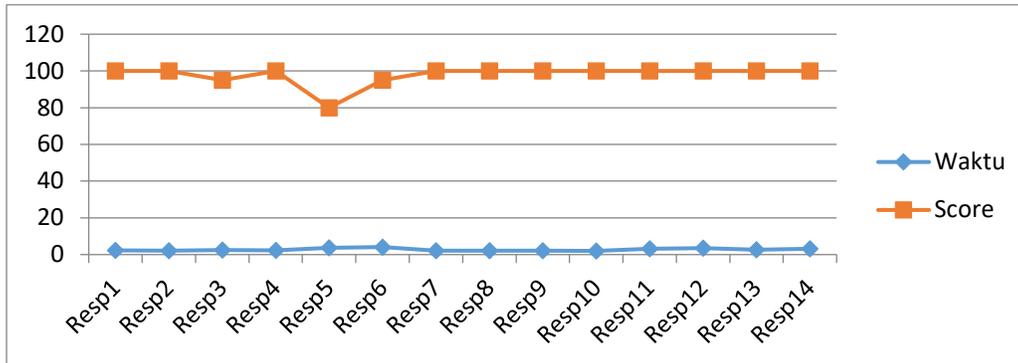


Figure 11. Chart Data of The Fifth Day

f) Implementation of the sixth day

The six children's learning activities arrived on time. The sixth day will be held on Sunday 8 September 2019 at 16.00 WIB. The activity was opened by volunteers, as usual, the volunteers asked how the children were then invited them to sing and play guesswork, the atmosphere was very cheerful. Then each child entered into their respective groups. The volunteer records all the activities in the group that he observes. Children carry out activities as instructed. The researcher observed by approaching one group at a time. The children are familiar with volunteers and researchers. After finishing the game, some children were playing ball in the yard of Mrs. Titi's house. It's presented at figure 12



Figure 12. Documentation of the sixth day of activities

After the activity, each child received a package containing healthy snacks. The chart to illustrate the time velocity and the score obtained from each respondent as presented at figure 13.

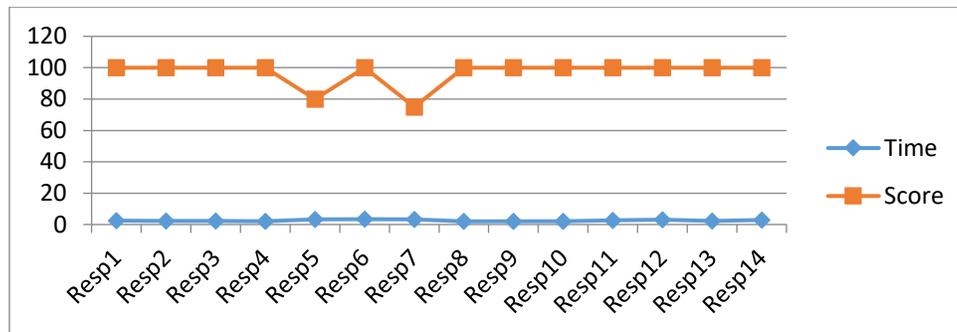


Figure 13. Chart Data of The Sixth Day

g) The implementation of the seventh day

The seventh learning activity is still in the mosque, the children come on time with their mothers. The third day will be held on Saturday 14 September 2019 at 16.00 WIB. Today is the last day of activities carried out. Today is different from normal days, there are representatives of the village government and village elders. The activity was opened by volunteers, the volunteers asked how the children were then invited them to sing and play guesswork, the atmosphere was very cheerful. Then each child entered into their respective groups. The volunteer records all the activities in the group that he observes. Children carry out activities as instructed. The researcher observed by approaching one group at a time as can be seen at figure 14.



Figure 14. Documentation of the seventh day of activities

Children are familiar with volunteers and researchers, and even want to ask for help when their cellphone has a problem. After the activity, the researcher gave an appreciation of the extraordinary activities of the children. Today is the last day of data collection. Researchers and volunteers would like to thank Mrs. Titi and her family for agreeing to provide assistance and allowing her house to be used as a location for data collection. Not forgetting, the research team gave a memento to Mrs. Titi and also for the RT in the form of a fan. There are no fans in the RT hall, if there is fan activity, borrow them from residents. The chart to illustrate the time velocity and the score obtained from each respondent as presented on figure 15.

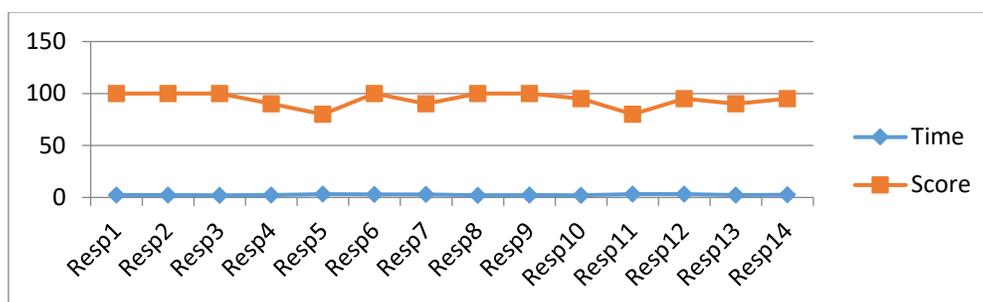


Figure 15. Chart Data of The Seventh Day

5. Discussion

In the learning game that is designed, students play games where the game material is taken from the subject matter in this subject Mathematics. Thus, they play games while learning. This condition is very supportive to reduce trauma in those post-disaster. The trauma that children experience after a disaster will affect their lives in the future. If this trauma is not immediately dealt with, it will have bad consequences for the future.

Sullivan and Ha`kkinen (2006) determine the level of study included in physics Disaster research must be disproved by research that addresses the psychological-no doubt behind the response to disasters. Response response consists of the three main points: “ warning warning whether whether or what whether or what whether or what if Remember?), Anticipated responses (are people responding and evacuating?) And evacuation (can people reach the area on time?) (Strunz et al. 2011, p. 72).

Mental health problems (trauma) will also be experienced by victims of disasters such as feelings of fear, shock, sadness, feeling of helplessness, and so forth. This is not only experienced by adults, but also children. Children are at higher risk following difficulties (Belfer, 2006; Norris et al., 2002), and because of the large role every day, children, school can serve what matters (Klingman, 2001; Little & Akin-Little, 2011; Nastasi, et al, 2011; Wolmer et

al., 2003; Zeng & Silverstein, 2011). Childhood trauma affects all of us. Traumatic events can damage children's personal lives, development, health, mental health, and ability to do life's tasks adequately. The same thing was conveyed by Cohen, et al (2006: 4), ongoing trauma that began early in life has the potential to dramatically change the trajectory of young people's development more than chronic trauma that begins later in adolescence. So, in some trauma situations, a younger age may be protective while in others, it can pose a greater risk. So the use of learning games to reduce trauma in post-disaster children, is expected to be a solution to handling trauma. School-based symptoms were the most frequent form of post-earthquake distress reported by teachers. Specifically, teachers noticed decreases in student achievement, lack of motivation to study, absences, and the inability to concentrate and master school lessons. The second most frequently endorsed group of symptoms was a fear of the traumatic experience re-occurring or having intrusive thoughts of the earthquake. This group of symptoms included intrusive thoughts (Widyatmoko, et al. 2011:32).

6. Conclusion

The conclusions were obtained as follows:

- a. This PEKA game is effective for overcoming learning in disaster areas and for reducing trauma in post-disaster children.
- b. This game can be easily installed on all brands and types of Android phones. It can be played without using the internet, is attractive for children to adults, and this learning game is effective for overcoming learning in disaster areas and for reducing trauma in post-affected children. disaster.

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Acknowledgements

This work would not have been possible without the financial support of the DIPA Unnes in Applied Research funded by Faculty of Education.

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