CHAPTER 1

INTRODUCTION

1.1 Background

Knowledge of natural disasters is quite common for the public, especially for people who live in areas prone to natural disasters. Every action should be carefully thought out, such as what I should do, what objects I need to take, and where I should go. Most people may not take these three things seriously, but these three things are the basic knowledge of disaster management later on. One of the natural disasters that is widely highlighted is the eruption of mountains, but the incidence of this disaster may be rare compared to other natural disasters. However, the impact of one volcanic eruption is very large and prolonged. Eruptions or volcanic eruptions can cause various disasters, not only in areas near the eruption (Setiadi, 2019).

The existence of volcanoes often invites various problems that need to be solved, both social and psychological, in the surrounding communities prone to volcanic disasters. The fall of casualties, loss of property, and the trauma of the impact of natural disasters will not subside so easily. However, the problem is that pre-disaster activities are considered disposable manpower and budgets due to natural disasters that have not occurred yet, or activities are better directed at post-disaster infrastructure improvements where the activities are more obvious. This is important to change the mindset that ultimately changes the cultural set from disaster and post-disaster responsive

efforts to pre-disaster mitigation and preparedness activities on a government scale in the regions (Faturahman, 2017).

The EM-DAT (international disaster database) report states that in 2018 there were reports of natural disaster events around the world resulting in the deaths of 11,804 people and more than 68 million people affected by disasters (WHO, 2018). Based on data from CSA (Central Statistics Agency) calculated from the number of villages in Indonesia, as many as 15,754 villages have disaster mitigation components, including natural disaster early warning systems (7,968 villages), safety equipment (2,738 villages), evacuation routes (5,048 villages). Mitigation efforts in East Java, according to BPS, as many as 1971 villages that already have disaster mitigation components include natural disaster early warning systems (1,162 villages), safety equipment (346 villages), and evacuation routes (463 villages). Banyuwangi itself has 76 total villages that have implemented the three components of disaster mitigation according to BPS, including the natural disaster early warning system (21 villages), safety equipment (12 villages), and evacuation routes (43 villages). Panjen Hamlet is one of the parts of Jambewangi Village in Banyuwangi, which has implemented the mitigation disaster component like an early warning system, evacuation route, etcetera.

Knowledge is the result of "knowing, " which happens after a person has sensed a certain object (Ratnasari, 2017). Knowledge can be a source of strength to carry out all things or desired actions; with adequate knowledge of things, we will make it easier to make decisions. Especially in a very precarious or dangerous state, the brain will provide reflexive stimulation in

response to the event. Deeds caused by reflexes can lead to good or bad things, depending on the brain's response to the results of the action. Percentages with good results can be increased through the presence of knowledge that will overcome the precarious/dangerous situation that is happening. It is also important when facing the dangers of natural disasters, namely knowledge of natural disaster mitigation. The types of natural disaster mitigation can be distinguished based on the type of disaster because the different forms of disasters will certainly have different impacts. However, sustainability can be minimized in terms of psychological and physiological aspects if we have the natural disaster management experiences gained during disaster mitigation training. So the psychologic will feel calmer and less panicky, and then evacuate yourself after the situation improves.

This study's urgency is based on Mount Raung's proximity to Panjen Hamlet, which is only around 15.3 km away. If it was estimated, this location is considered very close to the source of the disaster, especially when dealing with the impact of an active volcanic eruption. The lack of preparedness of the youths in Panjen Hamlet in managing volcanic disasters has become a big concern due to the lack of activeness of the Karang Taruna Community to anticipate the occurrence of volcanic disasters in confront the eruption of Mount Raung, which is located adjacent to Panjen Hamlet. Therefore, volcano disaster management needs to be studied and empowered to overcome and minimize the impact that will occur both moments before and after the disaster. Due to the need for more public knowledge about the importance of the form or model of management, such as how to overcome

and anticipate natural disasters (Saputra et al., 2020). Thus, the importance of implementing disaster management can be realized in the community. It is necessary for outsiders who enter the residential environment of volcanic disaster-prone areas and provide teaching and training on disaster management.

1.2 Limitations of The Problems

The problem in this case study is limited to teenagers who are members of the Karang Taruna Community in Panjen Hamlet, Banyuwangi.

1.3 Formulations of The Problems

What is the effect of virtual and augmented reality technologies on volcano eruption disaster management in the building of environments in Panjen Hamlet, Banyuwangi?

1.4 Research Purposes

1.4.1 General Purposes

To find out virtual and augmented reality technologies' effect on volcano eruption disaster management in building environments in Panjen Hamlet, Banyuwangi Regency, East Java Province 2021.

1.4.2 Specific Purposes

1. Identify volcano eruption disaster management in building environments before education in Panjen Hamlet, Banyuwangi Regency, East Java Province 2021.
2. Identify volcano eruption disaster management in building environments after education in Panjen Hamlet, Banyuwangi Regency, East Java Province 2021.

3. Analyze the effect of virtual and augmented reality technologies for volcano eruption disaster management in building environments adolescents after education in Panjen Hamlet, Banyuwangi Regency, East Java Province 2021.

1.5 Benefit

2.4 Theoretical Benefits

This research will provide information about volcano eruption disaster management in Panjen Hamlet, Banyuwangi.

2.4 Practical Benefits

1. For Respondents

   This study is expected to provide information on volcanic disaster management, so people in Panjen Hamlet, Banyuwangi can implement appropriate disaster management.

2. For Further Researchers

   This study can be used as a means and tool for gaining knowledge, experience and applying the researchers' knowledge in the field of volcanic disaster management.

3. For Educational Institutions

   The results of this study are expected to be used as a reference source for institutions in increasing knowledge related to volcanic disaster management in Panjen Hamlet, Banyuwangi.

4. For Society

   The results of this study are expected to provide information related to volcanic disaster management in Panjen Hamlet, Banyuwangi,

so the people, especially in Banyuwangi and Indonesia, who live in volcanic disaster-prone areas could apply it.

CHAPTER 2

LITERATURE REVIEW

2.1 Disaster Management Concepts

2.1.1 Definition of Disaster Management

Disaster management (Permana, 2018) is a science that studies disasters and all aspects related to disasters, especially disaster risks and how to avoid the disaster risks. Disaster management is a dynamic process of management functions that include planning, organizing, actuating, and controlling. The good and consistent running of disaster management functions will certainly reduce the percentage of casualties. Essentially preventing or overcoming disasters in order to minimize the damage and the losses.

2.1.2 Classification of Disaster Management

According to (Saputra et al., 2020), there are five disaster management models, namely:

1. Disaster management continuum model

   It is one of the most popular models because it consists of clear steps and is easy to implement. The steps in this model include emergency, relief, rehabilitation, reconstruction, mitigation, preparedness, and early warning.

2. Pre-during-post disaster model

   In This disaster management model is divided into stages of activities around the disaster. The stages of activity consist of activities

that need to be carried out before the disaster occurs, during the disaster, and after the disaster occurs. This model is often combined with the disaster management continuum.

3. Contract-expand model

   This disaster management model uses all stages of disaster management (emergency, relief, rehabilitation, reconstruction, mitigation, preparedness, and early warning) to be implemented in disaster-prone areas. The difference between disaster and non-disaster is when a certain stage of disaster is developed (emergency and relief) while other stages are less emphasized.

4. The crunch and release model

   This disaster management model focuses more on efforts to reduce vulnerability in disaster management. If the community is less vulnerable to disasters, it will be unlikely occur even though the hazards will still probably occur. This disaster management model focuses more on reducing vulnerability in disaster management. If the community is less vulnerable to disasters, it will be unlikely to occur even though the hazards will still probably occur.

5. Disaster risk reduction framework

   This disaster management model focuses more on identifying disaster risks from vulnerabilities and hazards and also capacity building in reducing disaster risk.

2.2 Volcano Disaster Mitigation Concept

2.2.1 Volcano Disaster Mitigation

Mitigation of a volcano disaster is divided into 3 parts, in line with the path of the time/event. That is the moment before, at the time, and the moment after the incident. Here are 3 events of the volcanic disaster mitigation time sequence according to (Setiadi 2019).

1. Before the eruption
    a. Identify the local area in determining where is the safe place to evacuate.
    b. Create a disaster management plan.
    c. Preparing for evacuation if necessary.
    d. Preparing basic needs (food and clothing for protective equipment).
2. While the eruption
    a. Avoid disaster-prone areas such as mountain slopes, valleys, and lava basins.
    b. At the outside, protect yourself from eruptive ash and hot clouds.
    c. Prepare for possible follow-up disasters.
    d. Wear clothes that could protect the body, such as long sleeves, trousers, hats and others.
    e. Use eye protection like swimming goggles or others.
    f. Do not wear contact lenses.
    g. Wear a mask or a cloth that could covers the mouth and nose.
    h. When hot clouds descending, try to cover the face with both hands.
3. After the eruption
    a. Stay away from areas affected by ash rain.

b. Clean the roof from ash deposits, as the weight can damage or collapse the roof of the building.

c. Avoid driving a car in an area affected by ash rain because it can damage the motorbike engine, brakes, gears to ignition.

2.2.2 Volcano Countermeasures

Efforts that can be made to reduce the impact of volcanic eruptions according to (Setiadi 2019), namely:

1. Monitoring

   Volcanic activity is monitored for 24 hours using an earthquake logger (seismograph). Daily data on monitoring results are reported to the office of the Directorate of Volcanology and Geological Disaster Mitigation in Bandung using SSB radio communication. Volcano observation post officers submit monthly reports to local governments.

2. Emergency Response

   Actions performed by DVMG when there is an increase volcanic activity.

3. Mapping

   A map of a volcanic disaster-prone area can explain the type and the character of the volcano's hazard, disaster-prone areas, self-rescue directions, evacuation sites, and disaster management posts.

4. Investigation

   The investigation of the volcano uses Geological, Geophysical, and Geochemical methods. The results of the investigation are displayed in the form of books, maps and other documents.

5. Socialization

Officials conducted outreach to the local government as well as the community, especially those living around the volcano. The form of socialization can be in the form of sending information to the local government and direct counseling to the community.

2.3 Concept of Knowledge

2.3.1 Definition of Knowledge

Knowledge is results from curiosity through sensory processes, especially in the eyes and ears, towards certain objects. Knowledge is important in forming open behaviour (Donsu 2017). Knowledge is the result of human sensing or the result of knowing a person about an object through the five senses they have. A person's five senses for sensing objects are sight, hearing, smell, taste and touch. At the time of sensing to generate such knowledge is influenced by the intensity of attention and perception of objects. A person's knowledge is largely obtained through the sense of hearing and the sense of sight.

2.3.2 Behavior Process

The process of adopting behaviour is to have several stages before a person can adopt a new behaviour within that person according to (Donsu 2017), such as:

1. Awareness, at this stage the individual is already aware of a stimulus that comes to them.
2. Interest or feeling interested, is while the individual begins to be interested in the stimulus.

3. Evaluation or weighing in, when the individual will consider whether or not the stimulus is good for themself. This is what causes the attitude of the individual become better.
4. Trial, where's the individual begins to try new behaviors
5. Adaption, the individual has a new behavior according to his knowledge, attitude and awareness of the stimulus.

2.3.3 Definition of Knowledge by Action

Knowledge is an important tool in the formation of actions/behaviours. In addition to each individual or community group's knowledge, attitudes and actions, driving figures who can teach or describe a behaviour can encourage the community to carry out prevention efforts. According to (Susihono et al. 2020) One of the factors influencing human behaviour or society is the level of knowledge. So a sufficient level of knowledge will certainly affect all actions related to decision-making, which can affect the outcome of the resulting impact.

2.3.4 Relation of Age with Knowledge

According to (Putra and Podo 2017) age affects a person's grasp and mindset. As they get older, their grasp and mindset will develop more so that the knowledge they gain is better. The more aged, the more mature the person will be more advanced in thinking and working. It also affects a person's cognitive response. If observed through community trust, a more mature person will be more trusted than someone who is not old enough / mature. The age at which it is suitable to start training is adolescence because,

according to (Dhafir and Agustin 2017) in adolescence, individuals are more likely to want always to try and find out.

2.3.4 Knowledge Levels

According to Notoatmodjo (Johariyah and Mariati 2018) a person's knowledge towards an object has a different intensity or degree. It's divided into 6 levels of knowledge, namely:

1. Knowing

   Knowing is defined as recalling or calling a pre-existing memory after observing something specific and the whole material studied or the stimulus received. Know is the lowest level. Verbs are used to measure people who know what is learned. They can mention, decipher, identify, state and so on.

2. Comprehention

   Understanding an object is not just about knowing the object, and also not just mentioning it, but the person can correctly interpret the object he knows. The person who has understood the object and the material should be able to explain, show examples, draw conclusions, and foresee against an object being studied.

3. Application

   Application is defined if a person who has understood the object in question can use or apply the known principle to other situations or conditions. The application also means applying or using laws, formulas, methods, principles, and program plans in other situations.

4. Analysis

Analysis is a person's ability to describe or separate and then look for relationships between components of an object or known problem. An indication that a person's knowledge has reached this level is if the person can distinguish, separate, group, and create a chart (diagram) against the knowledge of the object.

5. Synthesis

Synthesis is a person's ability to summarize or lay down the components of knowledge they already have in a logical relationship. In other words, an ability to compile new formulations from pre-existing formulations.

6. Evaluation

Evaluation is the ability to justify or assess a particular object. An assessment based on 17 self-determined criteria or norms prevailing in society.

2.3.6 Factors Affecting Knowledge

According to Wawan dan Dewi (Nurma Ika Zuliyanti 2019) the factors affecting knowledge are:

1. Education

Education is the guidance a person gives to the development of others towards certain dreams or ideals that determine human beings to do and fill life to achieve salvation and happiness. Education is needed to get information in the form of things that support health so it can improve the quality of life. According to YB Mantra, quoted by Notoatmodjo, education can affect a person, including lifestyle

behaviour, especially in motivating an attitude of advice and development. Generally, the higher a person's education, the easier it is to receive information.

2. Job

   According to Thomas, whom Nursalam quoted, a job is a bad thing that must be done to support his life and his family life. Job is not defined as a source of pleasure but a way of making a boring, repetitive, and challenging living. Meanwhile, work is a time-consuming activity.

3. Age

   Age is the age of an individual that is calculated from the time of birth until the birthday. The older one is, the level of maturity and strength of the person will be more mature in thinking and working. Regarding public trust, someone more mature than someone low in maturity is trusted.

4. Environmental Factors

   The environment is the entire condition of humans, and their influence can affect the development and behaviour of individuals or groups.

5. Socio-Cultural

   Socio-cultural systems in society can influence attitudes toward receiving information.

2.3.7 Knowledge Level Criteria

According to Nursalam (Ratnasari, 2017), The quality of knowledge at each level of knowledge can be done by scoring, namely:

1. The level of knowledge is good when the score is 76-100%
2. The level of knowledge is quite good when the score is 56-75%
3. The level of knowledge is not good when the score is <56%

2.3.8 Teen Age Limitations

Age limtation of adolescents and their classification according to (Soetjiningsih, 2004), it's:

1. Early adolescence aged 11 – 13 years.
2. Middle adolescence aged 14 -16 years.
3. Late adolescence aged 17 – 21 years.

2.4 Health Education Concept

Health education is a method of disseminating information that aims to spread messages and instil confidence so that people are not only aware, know and understand but also willing and able to carry out a recommendation related to health. Health education can be done through lectures, discussions and demonstrations. The lecture method has the advantage of low cost and can reach a variety of respondents with different demographic characteristics. The lecture method is a commonly used method for health counselling activities in the community. Implementing the lecture method can be combined with other health education methods or using media/props. (Pujiyanti Aryani and Trapsilowati Wiwik 2014).

2.5 Effect of Health education

The health education model can describe the interaction of a human being with his physical and interpersonal environment, which includes human behaviour that influences each other. This research is in line with Victoria et

al. (in Andili Ngelo and Virginia Wetik 2020), which states that collaboration between researchers and respondents is needed to create a comfortable situation and concentration so that adolescents can absorb the material given to adolescents.

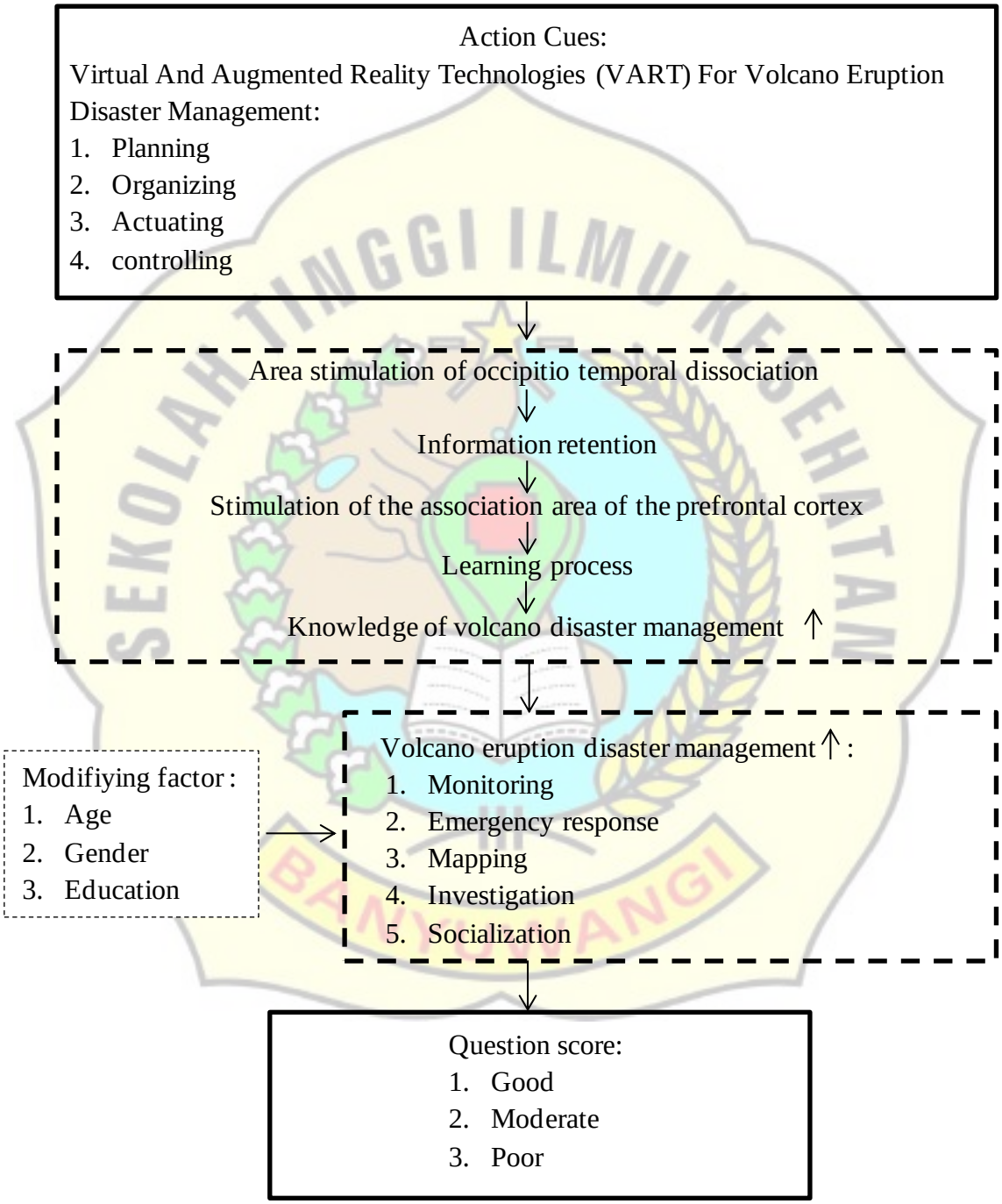
2.6 Virtual And Augmented Reality Concept

Virtual reality uses a stereoscopic head-mounted display with motion tracking to determine where the user is looking. Their view of the outside world is completely blocked, creating a strong immersion sensation while providing an unobstructed view of the virtual world. Augmented reality is a hybrid form of visualization that combines the real and virtual worlds. Augmented reality became a part of popular culture in 2016 with the release of the smartphone game. Augmented reality enhances the user's view of the real world with computer-generated elements, typically 2D or 3D graphics and text. This enhanced view is visualized through mobile devices or head-mounted displays like Google Glass (Boyles, 2017).

BAB 3

CONCEPTUAL FRAMEWORK

3.1 Conceptual Framework



Information:

: Studied variables

: Not studied variables

Picture 3.1 Conceptual Framework of Volcanic Disaster Management Knowledge

3.2 Hypothesis

Ha, the hypothesis is accepted when the value of Asymp. Sig. <0.05, which indicates there is an influence of the value of Asymp. Sig. >0.05, then the hypothesis of Ha was denied, indicating no influence.

SEKOLAH TINGGI ILMU KESEHATAN
BANYUWANGI

CHAPTER 4

RESEARCH METHODS

4.1 Research Type

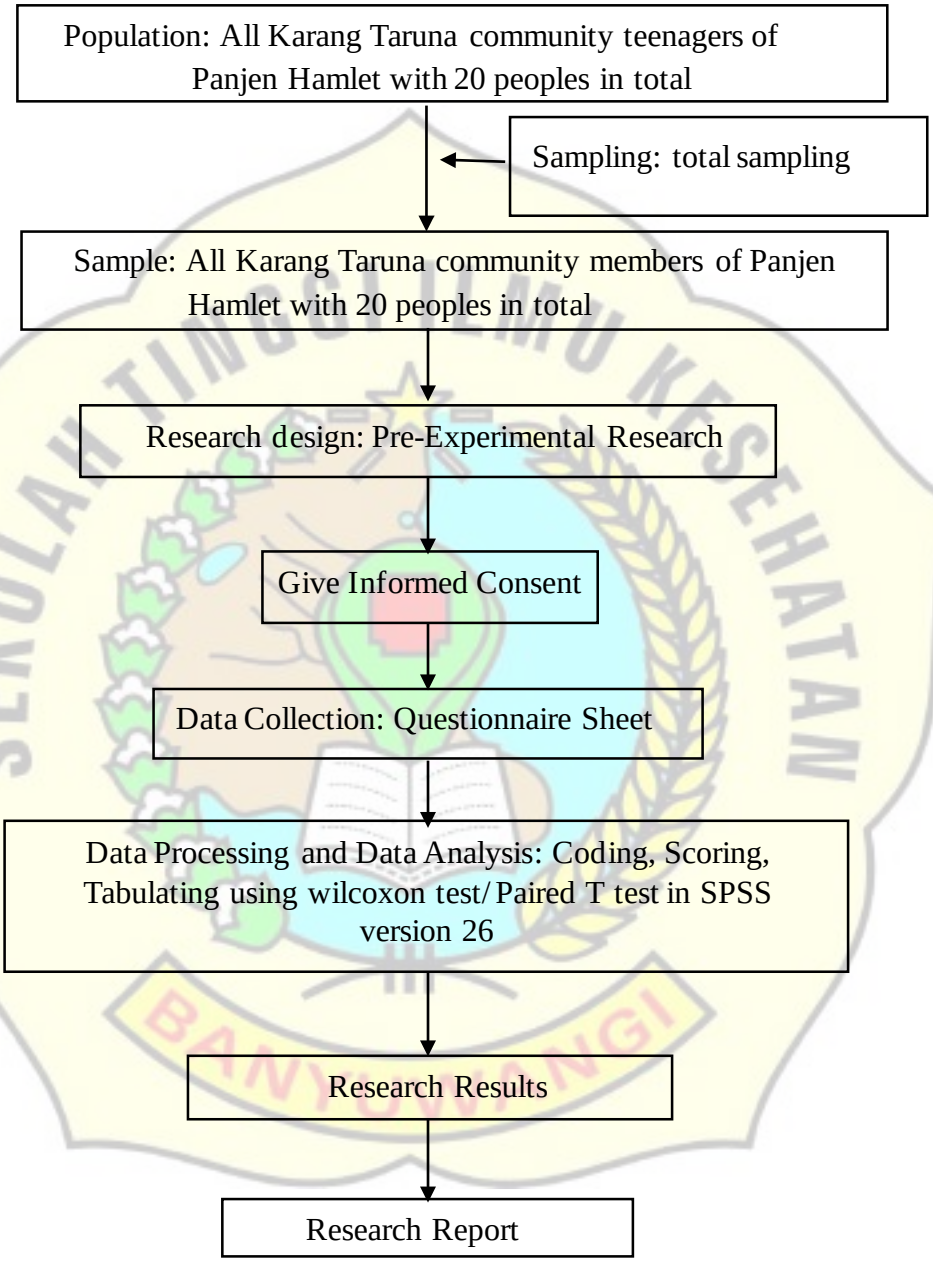
Research type is a strategy to achieve predetermined research goals and acts as a guide or closure of researchers in the entire research process (Nursalam 2016). Pre-experimental research is a design that includes only one group or class given pre-and post-tests. This pre-test and post-test design is one-group, carried out on one group without any control group or comparison (Sugiyono 2014). In this study, pre-experimentation was given using treatment so that the results obtained were known to be accurate and reliable; because there were differences in conditions before and after being treated, this experiment research was carried out in one group using pre-test, treatment, and post-test. This study held two observation meetings, namely before the post-test and after the pre-test and treatment (X) (Kholifah, Darmawan, and Suzanti 2016).

4.2 Research Design

The research design includes identifying an event, identifying variables, and developing the theory and operational definition of variables (Nursalam 2015).

4.3 Framework

The framework is a working chart of the research design to be carried out, including who will be studied (research subject) and variables that affect the research (Aziz Alimul 2016).



Picture 4.1 Framework

4.4 Population, Samples, and Sampling Techniques

4.4.1 Population Research

The population in the study is a subject (e.g., human; client) that meets predetermined criteria (Nursalam 2015). The population used in this study is all members of the Karang Taruna Community in Panjen Hamlet, which amounted to 20 people.

4.4.2 Research Samples

The sample comprises an affordable portion of the population that can be used as a research subject through sampling. While sampling is the process of selecting the portion of the population that can represent the existing population (Nursalam 2015). In this study, the sample is all members of the Karang Taruna Community in Panjen Hamlet, which amounted to 20 people.

4.4.3 Sampling Techniques

Sampling is the process of selecting a portion of the population to be able to represent the population. Sampling techniques are the ways taken in sampling order to obtain a sample that suits the entire subject of the study (Nursalam 2015). This study used a total sampling technique. Total sampling is a sampling technique in which all population members are used as samples or respondents. (Notoatmodjo 2005).

4.5 Variable Identification

Variables are behaviors or characteristics that give different values to something (Nursalam 2015). An Independent variable is a variable that affects, or the value determines another variable. A stimulus activity manipulated by the researcher creates an impact on dependent variables. Independent variables

are usually manipulated, observed, and measured to know their relationship or influence on other variables. In the science of nursing, the independent variable is usually a nursing stimulus or intervention given to the client to influence the client's behavior (Nursalam 2015). The independent variable in this study is virtual and augmented reality technology.

4.6 Operational Definition

Operational definitions are the constraints of variables measured by the involved variables (S Notoatmodjo 2012).

Table 4.1 Operational Definition of The Effect of Virtual And Augmented Reality Technologies for Volcano Eruption Disaster Management.

Variable	**Operational definition**	**Indicators**	**Measuring Instruments**	**Scale**	**Score**
Virtual and augmented reality technology (independent variable)	Virtual & augmented reality is appearance of a three-dimensional image created by a computer so that it looks real with some help of other tools making the user seem to be physically involved in the environment	Health Education: Volcano disaster management Video Content: 1. Earthquake warning 2. Hiding for protection 3. Go outside the building 4. Follow the evacuation route 5. Help others if possible 6. Calmed our self-down after arrived at	**SOP**	-	-

		evacuation field Duration: 4 minutes and 44 seconds			
Volcano eruption disaster management (dependent variable)	Volcano disaster management is a science that studies all aspects related to volcanic disasters, especially disaster risks and how to avoid disaster risks	Disaster management implementation: 1. Planning 2. Organizing 3. Actuating 4. Controling Volcano disaster management: 1. Monitoring 2. Emergency response 3. Mapping 4. Investigation 5. Socialization	Questionnaire	Ordinal	1 Good 14-20 2 Moderate 8-13 3 Poor 2-7

4.7 Research Instruments

Instruments are tools used for data collection for the purpose of the study (S Notoatmodjo 2012). This study used a volcano disaster management questionnaire instrument.

4.8 Research Location and Time

4.8.1 Research Location

This research conducted in Panjen Hamlet, Banyuwangi Regency, East Java Province.

4.8.2 Research Time

The time of this study started from April to May 2021.

4.9 Data Collection Procedure

4.9.1 Licensing Bureaucracy

Before carrying out the research, the author asked for a research permit to the Head of STIKes Banyuwangi, followed by asking for permission to the Covid Task Force then the researcher submitted a preliminary study letter to the Head of Neighbourhood Panjen Hamlet to obtain a preliminary study permit.

4.9.2 How Data is Collected

Before conducting the research, the researcher asked permission from the Head of the Panjen Neighbourhood Hamlet. Once approved, the researcher looked for respondents to use as samples. Then the researcher briefly explained the purpose to the respondent and gave informed consent to get approval to participate in the study. After respondents agreed to inform consent, the researcher provided a volcano disaster management knowledge

questionnaire for data collection. After the data was collected, the data were tabulated and analyzed.

4.10 Data Analysis and Data Processing

4.10.1 Data Analysis

Data analysis is a very important part of achieving the main goal of the research, which is to answer research questions that reveal phenomena (Nursalam 2015). Before analyzing the data, sequentially, the data that has been collected will undergo a process of editing, coding, scoring, and tabulating.

4.10.2 Coding

Coding is giving a code to data in the form of numbers (Nursalam 2013).

Volcano Eruption Disaster Management

a. Good : 3
b. Moderate : 2
c. Poor : 1

4.10.3 Editing

Editing is an attempt to re-examine the veracity of data obtained or collected (Aziz Alimul 2016). Editing in this study is to check the completeness of the contents of the questionnaire statement, as well as the suitability of the scores listed by the researcher.

4.10.4 Scoring

The data is scored using a value scale demonstrating knowledge of volcano eruption disaster management.

Good (3) : 14-20

Moderate (2) : 8-13

Poor (1) : 2-7

4.10.5 Tabulating

Tabulating is the presentation of data in a table consisting of several rows and columns. Tables can be used to explain at once several variables from observation, survey or research until the data is easy to read and understand (Nursalam 2013).

4.10.6 Data Processing

From the data collected, an analysis of Volcano Eruption Disaster Management knowledge was carried out on adolescents in the Karang Taruna Community of Panjen Hamlet using pre-experiments. Researchers use pre-experiments because the variable (dependent) data is an ordinal scale.

Pre-Experiment

Pre-experimental design is a design that includes only one group or class given pre-and post-test. This design of one group pretest and post-test design was carried out on one group without any control or comparison group. (Sugiyono 2014).

Wilcoxon

Furthermore, using the Wilcoxon test, the effect of volcano eruption disaster management was analysed on adolescents in the Karang Taruna Community of Panjen Hamlet. The Wilcoxon test was used to determine whether or not there was an average difference between two samples in pairs

(Hastari, Gandasari, and Harry 2020). Researchers used the Wilcoxon test because the data on variables (dependents) is ordinally scaled.

Paired-t

Furthermore, an analysis of the effect of volcano eruption disaster management was carried out on adolescents in the Karang Taruna Community of Panjen Hamlet using t-tests. The t-test of two paired samples aims to determine whether there is a difference in the average of two samples (two groups) that are paired or related (Sheilliarika, Maryani, and Hendi 2020). Researchers use t-tests because the data on variables (dependents) is ordinally scaled.

4.11 Research Ethics

Ethics is a critical issue in research. Nursing research is directly related to humans, so research ethics must be considered (Aziz Alimul 2016). After receiving approval from the STIKes Banyuwangi Agency and the Head of Neighbourhood of Panjen Hamlet, the researcher conducted research by emphasizing ethical issues:

4.11.1 Informed Concent

Informed Consent is information that must be given to the subject in full about the purpose of the research to be carried out and have the right to participate or refuse to be a respondent freely (Nursalam 2015).

Informed Concent is given before the study is carried out, the subject is informed about the intent and objectives of the researcher. If the respondent is willing, they sign a consent sheet so that the researcher is free from liability, but if the respondent is not willing to be the subject of the

study, then the researcher should not constrain them.

4.11.2 Anominity

Respondents do not need to put their names on the data collection sheet; write the name's initials or codes to ensure the confidentiality of their identity so that the respondent's privacy is maintained.

4.11.3 Confidentiality

Confidentiality is an ethical problem in a study carried out by guaranteeing the confidentiality of research results, information, and other issues. The researcher guarantees all information collected confidentiality; only certain data groups will be reported on the research results. (Aziz Alimul 2016).

4.11.4 Justice

Justice is a form of fair therapy towards others that upholds moral, legal and humanitarian principles. The principle of justice is also applied to the Pancasila of the Indonesian State in the fifth precept, namely social justice for all Indonesian people, as a result of this showing that justice is a form of principle that can balance the world (Abrori 2016). Researchers have tried to be fair to all respondents.

4.11.5 Non Maleficent

Non-Maleficent is a principle that means that every action done to a person does not cause physical or mental harm (Abrori 2016). This study is not expected to harm respondents.

4.12 Research Limitations

This research has limitations; at the time of the study, researchers could only accompany respondents online when filling out questionnaires due to impossible conditions as a consequence of the COVID-19 pandemic.