

## **Using Tsunami Museum As Learning Resources To Improve The Understanding of Disaster Mitigation For Impaired Hearing Students' And To Examine Characters of Impaired Hearing Students After Exposed To The Material Atbukesra Special Need Schoolbanda Aceh**

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**Abstract:** *The aim of the study was to examine the improvement of deaf and hard of hearing students' understanding of Disaster Mitigation material using Tsunami museum as learning resources and to investigate the students' characters after exposed to Disaster Mitigation material. The population of the study was 15 BUKESRA Secondary Special Need School students year X-B. The data was collected through written test consists of 20 disaster mitigation questions and questionnaire about students' characteristics delivered twice during the study. The data was analyzed using percentage formula. The result of the study indicated that there was 30 % of improvement of the students' understanding toward disaster mitigation materials. It is also found that the students' characters were also increased in term of self-confidence, independent, logical thinking, responsibility, and care. It is concluded that there was an improvement of students' understanding in learning disaster mitigation in Tsunami museum. Moreover, the students' characters are found better in term of self-confidence, independent, logical thinking, responsibility, and care after exposed to the materials.*

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### **I. Introduction**

Learning resources is everything that can be used to obtain knowledge, experience, and skill in order to achieve learning aims (Lilawati, 2017). Puspita (2017) stated that teachers should be selective in using learning resources and nature is one of learning resources that can be applied in learning process. However, the learning resources used should be in accordance with the aim, condition, and students' learning environment. The use of learning resources at Indonesian schools is commonly found low because teachers mostly use textbooks in teaching. Consequently, students have low understanding in learning in classes.

Students' low understanding can be anticipated through the use of effective learning resources. This is as has been argued by Septiani (2017) that effective learning activities are stimulated by effective learning environment. School environment plays major role in learning; therefore, good facilities are required to support students' learning, especially for students with disabilities such as deaf and hard of hearing students.

Teachers need to pay special attention to disabled students in order to increase their study interest. Teachers should also ignore students' weaknesses and use their strengths to achieve good achievement in their study (Zakia, 2016). However, it is commonly found that teachers use general process learning for special need students which result in inability of students in capturing the lessons.

According to Savitri (2015), deaf and hard of hearing is people who have impaired hearing or unable to hear. Students with this disabilities need special education to improve their understanding in learning as well as to shape good characters.

Character education is very important in schools since it will develop students' potency to have good personalities and characters (Priyambodo, 2017). The characters according to Syarief (2017) includes religious, honesty, tolerance, discipline, hard-work, creativity, independent, open, curiosity, nationalism, respect, friendly, peace, reading interest, environmental care, sympathy, and responsibility.

Moreover, disabled children face difficulties in understanding geography lesson mainly related to nature phenomenon theory. Therefore, they require specific learning method using visual media.

Kemendikbud (2014) claimed that museum functions to keep historical objects and as learning resources. Thus, the researcher chooses tsunami museum as learning resources for Geography lesson since it is a research center to study Tsunami devastated Aceh in 2004.

Ulum (2017) conducted a study on "The Differences in Vocabulary Mastery of the Deaf and Hard Hearing Children of SDLB-YRTRW and the first grade of Elementary Islamic School of SunanKalijaga". He indicated that special need children need special aid not only material but also motivation and spiritual education which relies on love. Thus, learning resources is one of significant factor for their learning. This is also in line with Meiristiya (2016) in which she conducted a study on "The Impact of Learning Resources on Students' Achievement in History Class for the First Grade of Social Science Class in SMA Negeri 2 Mojokerto. The result showed that the use of learning resources can increase students' achievement.

In addition, Lustanti (2013) carried out a study regarding the use of environment to enhance learning outcomes of elementary students in social class. The result indicated that the use of surrounding environment as learning resources can improve teachers' and students' activity in learning process and to increase learning outcomes.

Based on previous studies, the researcher is interested to conduct a study on the use of Tsunami museum as learning resources for students to improve the understanding of disaster mitigation and investigates the students' characteristics after exposed to disaster mitigation materials

The aim of this study is to examine the improvement of deaf and hard of hearing students' understanding of Disaster Mitigation material using Tsunami museum as learning resources and to investigate the increase of the students' characteristics after exposed to Disaster Mitigation material.

## II. Methodology

The study was conducted in BUKESRA Secondary Special Need Schools in Banda Aceh during Geography class in class X-B with Disaster Mitigation topic. The population in this study were 15 students of grade X-B (total sampling). Data collection was administered through written test and observation

### 1. Written Test

The test consists of 20 multiple test questions in which C1 has 8 questions, C2 has 7 questions, C3 has 4 questions, and C4 has 1 question. The test was run in two sessions and the result of the test will be used to analyze:

1.1 Individual learning mastery is the mastery of each student which is analyzed using percentage formula as follows:

$$KB = \frac{F}{N} \times 4 \text{ (Sudijono, 2010)}$$

KB = Ketuntasan belajar (learning mastery)

F = Frekuensi jawaban yang benar (the frequency of correct answer)

N = total of question

4 = the range of maximum score

### 2. Observation

Observation is used to investigate students' characters after exposed to Disaster Mitigation topic with Tsunami museum as its learning resources. There are some characters observed that is confidence, logical thinking, independent, responsibility, hard work, and care.

**Tabel 1.** Assessment of character education

No	Character	Scores			Note
		1	2	3	
1	Confidence				
2	Logical thinking				
3	Independency				
4	Responsibility				
5	Care				

(Source :Kemendikbud, 2016)

**Tabel 2.** Indicator of character education assessment

No	Character	Indicator
1	Confidence	1. Inability to plan and decide realistically targets to be achieved.
		2. Doubt on planning and deciding targets to be achieved.
		3. Ability to plan and decide realistically targets to be achieved.
2	Logical thinking	1. Inability to express ideas of an issue.
		2. Doubt on expressing ideas of an issue.
		3. Ability to express ideas of an issue.
3	Independent	1. Inability to make a decision for finding solution of a problem.
		2. Doubt on making decision for finding solution of a problem.
		3. Ability to make decision for finding solution of a problem.

4	Responsibility	4. Do not complete the task as required and do not accept the risk. 5. Doubt on completing the task and accept the risk 6. Completing the task and accept the risk.
5	Care	7. Being apathetic toward surrounding environment to help solving problems. 8. Being doubtful to show care toward surrounding environment to help solving problems. 9. Care about surrounding environment to help solving problems.

(Source :Amiluddin, 2014)

The result of the observation will be analyzed using percentage formula.

### III. Result And Discussion

#### 1. Written Test

It is found that the result of the study in the first session, the percentage of individual learning mastery after using Tsunami museum as learning resource is 73.3 %. 11 out of 15 students achieved the learning mastery and the classical learning mastery is 60%. In the second session, the learning outcomes of individual learning mastery is 93.1 % or 14 out of 15 students and the classical learning mastery is 90%.

#### 2. Observation Sheet

Observation is carried out to investigate the increase of students' character after exposed to Disaster Mitigation topic. There are some aspects observed as written in Table 4.

**Table 4.** Assessment analysis of students' character in session I and session II

No	Character	Session I				Session II			
		1	2	3	Total (%)	1	2	3	Total (%)
1	Confidence	60	18	22	100	20	5	75	100
2	Logical thinking	73	14	13	100	15	5	80	100
3	Independence	64	9	27	100	11	7	82	100
4	Responsibility	71	7	22	100	12	15	73	100
5	Care	71	17	12	100	25	8	67	100

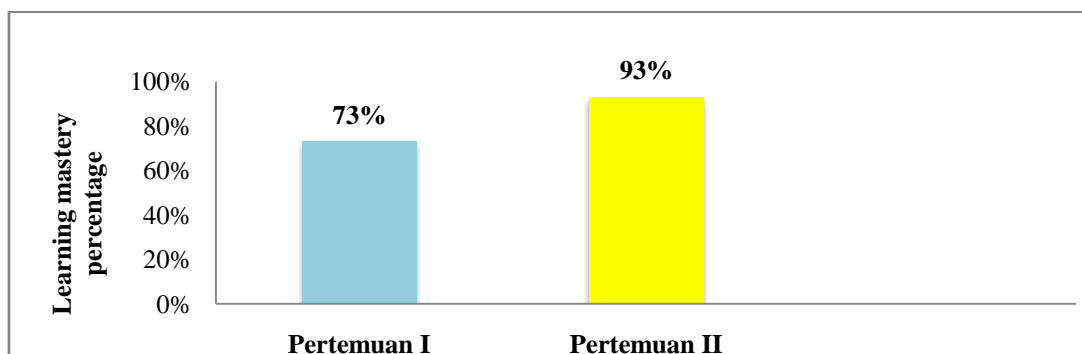
Source :BUKESRA Secondary Special Need School, Banda Aceh (2017)

Based on the observation result, it is found that in session 1 and session 2 there is an increase of students' character that is 53% in "Confidence" character, 67% in "Logical thinking" character, 55% in "Independence" character, 51% in "Responsibility" character, and 55% in "Care" character.

Furthermore, the discussion of the analysis will be described below:

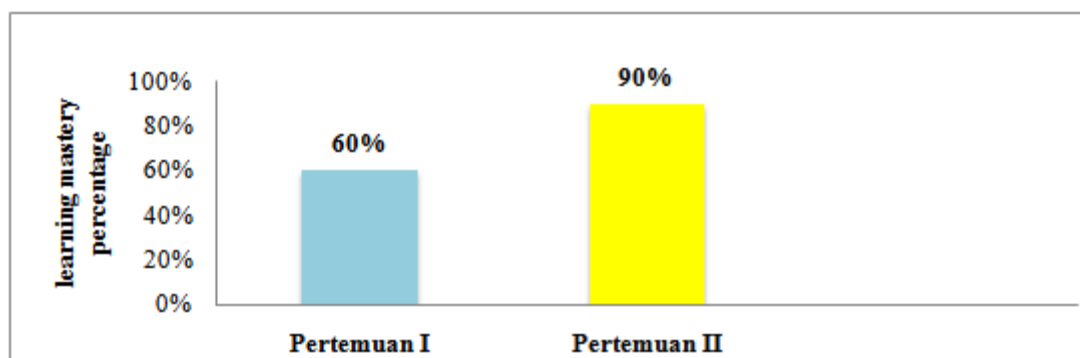
#### 1. Written test

The data result of the written test will be represented in the graph below in picture 1.



**Picture 1.** Graph of Individual Learning Mastery

According to Picture 1, it is shown that the individual learning outcome in session I is 73.3%, then it increases to 93.3% in session II.



Picture 2. Graph of Classical Learning Mastery

According to Picture 2, it is shown that there is an increase of classical learning mastery from the first to the second meeting. In the first meeting, the learning mastery is 60% from 20 questions and it is also found that there are 12 questions completed by the students. The first meeting does not achieve the classical learning mastery since the percentage result obtained by the students is below the minimum learning mastery. Meanwhile, in the second session, the classical learning mastery reaches 90%. From 20 questions, only 2 questions are not completed by the students. Overall, the second session is fully completed because it is over 85%.

Similar finding is also revealed by Pratama (2017) who studied about "The Impact of the Use of Comic Graph Media toward Students' Achievement in Science Subject with Topic of Human Organs Function. The subject was students of grade V SLB B. The finding indicated that the learning media used can improve the achievement of deaf and hard of hearing students in which the resources used is not only school textbooks but also other kind of resources. In general, the learning resources used in learning process can affect students' achievement in learning.

However, it is found that 7 % of the students and 10 % of a class have lower improvement in understanding the topics. This is may be caused due to students' internal factors in which according to Pinge (2016) internal factors is the ability to see, hear, and feel. So, one aspect that may affect students' achievement is students' internal factor such as deaf and hard of hearing. Suningsih (2017) added that deaf students has limited ability in communication such as in expressing ideas. Thus, they take more time in understand and comprehend things.

## 2. Observation

The result of the study indicated that there is a significant improvement on five characters investigated (confidence, logical thinking, independence, responsibility, and care). It is found that in the first character (confidence) 75% of the students have "confidence" which is reflected on the students' ability to plan and decide the targets realistically while another 25 students have low confidence.

In the second character (logical thinking), there are 80 students found able to think logically. This appears at students' ability to express ideas of an issue while another 20 students have low ability to think logically in which sometimes the students are not able to express ideas of an issue.

In the third character (independence), there are 82 students found to have "independence" where the students are able to make decision to find solution of an issue while another 18 students are unable to find solution of an issue.

In the fourth character (responsibility), 73 students are found to have "responsibility" in completing tasks. This is indicated by students' ability in completing the tasks properly along with taking the risk of what they have done while another 27 students showed their neglect in completing the task.

In the last character (care), 67 students showed their care at their surrounding indicated through their action in helping to solve problems while another 33 students showed their disregard. It is also found that some of the students complete the task properly, confidently, with responsibility, and independently; but, they lack of care toward the surroundings and only care of themselves.

Students with impaired hearings have limitations in communication ability (Suningsih, 2017). Moreover, Nurhayati (2017) conducted a study on parenting of socioemotional of impaired hearing students. The result showed that there is no correlation between parenting and socioemotional of impaired hearing students including character education and the change of students' character is also not found in the study.

On the contrary, another study who succeed in improving students' character education was conducted by Saputro (2017) with the topic: "the Development of Students' Activity Sheet with Entrepreneurship Oriented in Household Chemicals Waste". The study was also conducted for impaired hearing students in Secondary

Special Need School. The result indicated that there is an increase of character in impaired hearing students in terms of confidence and independence after using the surrounding environment as learning resources.

#### IV. Conclusion

Based on data analysis, it is concluded that:

1. There is an improvement of students' understanding of the materials taught using Tsunami museum as learning resources.
2. There is an improvement of the students' character after exposed to the materials using Tsunami museum as its learning resources in terms of confidence, independence, responsibility, care, and logical thinking.

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