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Utilization *Edugames Baamboozle* as an Evaluation Media for the Biology Cognitive Abilities of Class 14 Bone High School Students

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ABSTRACT

This research aims to find out how the Edugames baamboozle media is used as an evaluation medium for the biology cognitive abilities of class X students at SMAN 14 Bone. The research used is quantitative research with the Pre-Experimental Design type of research with the One Group Pre-test and Post-test Design type. The data collection technique used in this research is giving a pre-test and post-test in the form of multiple choice and documentation. The results of inferential analysis using three tests, namely normality test, homogeneity test and hypothesis test, are known from the results of normality data analysis using one Kolmogrov-Smirnov test, pre-test 0.83 > 0.05 and post-test 0.37 > 0.05 (normal). The homogeneity test using Levene Statistics shows 0.32 > 0.05 (homogeneous) and based on the t test using the Paired-test the significant rate used is $\alpha = 0.05$. The data obtained is significant (0.000) < = 0.05, thus H0 is rejected and there was acceptance of H1 which showed that there was effectiveness before the treatment was given and after the treatment using the Edugames baamboozle media. Based on research conducted at SMAN 14 Bone, the average pre-test score was 39.7, while the average post-test score was 85.0. The post-test score was higher than the pre-test score. It can be concluded that through the Edugames baamboozle media it has an influence on the Biology cognitive abilities of class XI students at SMAN 14 Bone and they provide a positive response to this learning media.

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INTRODUCTION

Education is a conscious and planned effort to form and cultivate in children the qualities needed by society and themselves, including religious and spiritual maturity, self-discipline, intelligence and moral honesty , in this way a quality future generation of the nation is formed (Kadarsih, *et al.*, 2020). The quality of education in Indonesia is very low compared to other countries (Kurniawati, 2022). Students also contribute to this problem

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because they are less aware of the importance of studying effectively; on the other hand, teachers also need to find ways to attract students during the learning process (Mansir, 2020) .

Teachers are a very determining component in the success of learning, this is because teachers remain at the forefront of the learning process because they interact one on one with students (Damanik, 2019) . A teacher needs to have strong subject matter knowledge, good classroom management skills, and the ability to make learning fun for their students (Salmiah, *et al*., 2022) . The physical and mental environment of students, as well as the accessibility of learning resources, are two of the many factors that influence student performance in class, so these two aspects need to be considered to help students achieve their learning goals (Rejeki, *et al.,* 2020) .

Based on the results of observations at SMAN 14 Bone school in Biology learning, it shows that students' cognitive abilities are still low. This is caused by several factors, including students feeling that biology is a difficult subject because of its broad scope, teachers are still not optimal in using learning media. When explained, students pay less attention to the teacher, because the method used is a lecture method without using media that attracts students' attention.

Learning media is very necessary to support successful learning (Salsabila, *et al*., 2020). The use of learning media makes abstract concepts that were previously difficult more accessible to students and makes it easier for teachers to convey learning material (Wulandari & Mudinillah, 2022). Media consists of everything that can be seen visually, aurally, or textually, and when used appropriately in a learning context, can be easily copied or controlled so that it has an impact on the learning outcomes ((Zahwa & Syafi'i, 2022). Thus, effective use of media is the key to improving the quality of education.

Teachers can explain complex ideas better to their students when they have access to learning resources (Purnawanto, 2023). Interaction between teachers and students, as well as other learning tools, requires appropriate media assistance throughout the learning process (Rejeki, *et al.,* 2020) . The description of the existing problems attracted researchers' initiative to use *Edugames baamboozle* as a medium for evaluating biological cognitive abilities. *Edugames baamboozle* is used as a solution to keep learning fun. With this learning media, teachers can divert students' attention, so they don't get bored and fed up quickly in the teaching and learning process (Saud, *et al.,* 2022) .

Edugames baamboozle is a learning *platform that* can be used online, providing various types of quiz features and interactive activities. *Bamboozle* not only encourages students to actively participate in learning, but also allows teachers to create interesting and challenging learning experiences (Tsurayya & Sukmawati, 2023). This media is very suitable for use by teachers in understanding how important learning is fun and exciting for students of all ages and they will always feel interested and have an interest in learning to participate in the learning process (Muhajirin, *et al.,* 2022).

The advantage of using *Baamboozle media* is that it is played in groups so that student cooperation can be seen (Verina, *et al* ., 2024) . This media makes students more active in participating in the learning process and is used practically and creates competition which leads to positive things. Apart from that, in the *Baamboozle media* there are *power-ups* which contain additional gift points which can make the game more fun for students so that their motivation and interest in learning increases (Mariani, *et al.,* 2022). Therefore, the author is

interested in conducting research with the title "Utilization of *Baamboozle Education* as a Media for Evaluation of Students' Biological Cognitive Abilities at SMA Negeri 14 Bone. The purpose of this research is to find out how useful *Edugames baamboozle* is as an evaluation medium for students' cognitive abilities.

METHOD

Types of research

This type of research is a quantitative research using the *Pre-Experimental Design method* which uses one class, at the beginning of the lesson a pretest is given and at the end of the lesson a posttest is given.

Research design

The research design used is *One group* pretest-posttest design, namely experimental research carried out in one group. Classes are selected to have equivalent characteristics so that the learning provided has an impact according to the media used. The research results obtained from this design will be presented in Table 1 below.

Table 1. Research design

Class	*Pre-test*	Approach	*Post-test*
Experiment	O_1	X	O_2

Information:

O_1 : Pre-test score before the treatment approach is given

X : The approach (treatment) is given to students using the Edugames baamboozle *media*.

O_2 : Pre-test score after being given the approach (treatment) with *Edugames bamboozle* media.

Location and time of research

This research was carried out in class XI at SMAN 14 Bone, Tellu Sittinge District, Tokaseng Village, Bone Regency. This research was carried out in February- April in the Even semester of 2023/2024

Research Instrument

There are two instruments used in this research, namely tests and documentation. The test is used to measure students' skills, knowledge, abilities and talents, the test is in the form of a multiple choice of 20 numbers. Meanwhile, documentation is one way to obtain data regarding archives, photos and other records needed for research.

Population and research

The population is used as a data source and object where the research population is all class X students of SMA Negeri 14 Bone which consists of 7 classes and the sampling technique used is *purposive sampling.*

Data collection technique

The data collection techniques applied in this research are cognitive ability tests (pretest-posttest) and documentation. Apart from that, observations are also carried out to directly monitor the ongoing learning process.

Data analysis techniques

There are two data analysis techniques used in this research, namely descriptive statistical analysis and inferential statistical analysis. Descriptive statistical analysis is a general description of data collected regarding students' cognitive abilities in using learning media. The assessment criteria used in this research can be seen in the Table 2.

Table 2. Scoring category

No.	Score	Category
1.	81-100	Very well
2.	61-80	Good
3.	41-60	Enough
4.	21-40	Low
5.	0-20	Very low

Source: As'ad, *et al.* (2024).

There are three inferential statistical analyzes used Test methods are normality test, homogeneity test and hypothesis test. Normality test criteria are if there is a significance level greater than 0.05 % then the data is considered to be normally distributed. The criteria for homogeneity testing data are if the probability value is greater than the significance level of 5% then H_1 is accepted and H_o is not accepted, while for hypothesis testing if there is a sig (2-tailed) less than 0.05 H_1 then it is accepted and H_o is not accepted.

RESULTS AND DISCUSSION

Descriptive statistical analysis

Descriptive statistical analysis is used to manage information from the results data obtained. Pre-test descriptive statistical data can be seen in the table below.

Table 3. Data pre-test descriptive statistics for class X1 students

Descriptive Statistics	Statistical Value
Subject	35
Value range	35
Average (*Mean*)	39.7
Median	40.0
Mode	40
Minimum value	20
Maximum value	55
Standard division	9.7

Source : *SPSS* Version 22

From the results of the descriptive analysis before being given an approach using the *Edugames baamboozle learning media* shows that the variable average pre-test score is 39.7, while the median score is 40.0, the maximum score is 55 and the minimum score is 20 with a range of 35 with the number that often appears showing the number 40. As for the division standard value of 9.7, it can be seen that the average (*Mean*) is greater than the division standard. The percentage and frequency distribution of pre-test results can be seen as follows.

Table 4. Frequency distribution and percentage of students' pre-test cognitive abilities

No.	Score	Percentage	Frequency	Category
1.	81-100	0	0	Very well
2.	61-80	0	0	Good
3.	41-60	37.2%	13	Enough
4.	21-40	57.1%	20	Not enough
5.	0-20	5.7%	2	Very less

Based on Table 4, it can be illustrated that of the 35 students before being given the approach using media, there were 13 students who got sufficient scores with a percentage of 37.2%, 20 students who were included in the low category with a percentage of 57.1% and 2 students who The score obtained was very low in the percentage category, namely 5.7% and there were no students who obtained scores in the good and very good categories.

Table 5. Data Post-test descriptive statistics for class X1 students

Descriptive Statistics	Statistical Value
Subject	35
Value Range	25
Average (*Mean*)	85.0
Median	85.0
Mode	95
Minimum Value	70
Maximum Value	95
Division Standards	7.9

Source: *SPSS* Version

From the results of the descriptive analysis in Table 5 after being given an approach using the *Edugames learning media baamboozle* shows that the variable average (*Mean*) post-test value is 85.0, the median value is 85.0 and the maximum value is 95. While the minimum score is 70 with a range of 25 with the numbers that appear showing the number 95, the standard division score is 7.9. Furthermore, below is a frequency distribution table and percentage of results obtained from the post-test.

Table 6. Frequency distribution and percentage of students' post-test cognitive abilities

No.	Score	Percentage	Frequency	Category
1.	81-100	60%	21	Very well
2.	61-80	40%	14	Good
3.	41-60	0%	0	Enough
4.	21-40	0%	0	Not enough
5.	0-20	0%	0	Very less

Based on table 6 above, 35 students were given an approach using *Edugames media baamboozle* , 21 students (or 60%) obtained very good grades, 14 students (or 40%) obtained good grades, and there were no students (or less than 5%). reached fair, low, or very low values. From the descriptive analysis it can be concluded that 35 students obtained a perfect score of good or very good.

Inferential Analysis

Based on the inferential analysis of the normality test results, it can be seen from the results of data analysis using *the one Kolmogrov-Smirnov test* that the sig value, (2-tiled) taught using *Edugames baamboozle* as a medium for evaluating students' cognitive abilities shows pre-test results of 0.83 > 0, 05 and post-test 0.37 > 0.05, it can be concluded that the data obtained is normally distributed.

Furthermore, the homogeneity test using *Levene statistics* obtained results of 0.32 > 0.05 so it can be concluded that the population of this study is homogeneous. Based on the t test using *Paired* - the significant rate *test* used is α =0.05. The data results obtained were

significant (0.000) < = 0.05, thus H_0 was rejected and H_1 was accepted. This is relevant to the study conducted by Suryani, *et al*. (2023) which states that if the probability value is greater than the 5% significance level, then the data can be said to be homogeneous.

This research uses a pre-experimental type, meaning it only uses one class without a control class. The sample used was class XI with a pre-test (before the media approach) and post-test (after the media approach). This research aims to find out whether there is an effect of using *Edugames baamboozle* on the cognitive abilities of class XI students at SMA Negeri 14 Bone.

The research began by administering a pre-test before the *Edugames baamboozle learning media approach.* The average score obtained by students before being given the approach using learning media was 39.7 which was in the low category. Students' cognitive abilities are categorized as low because they are influenced by the perspectives of teachers and students during the learning process. Some students tend to be closed to teachers, making it difficult for teachers to understand the extent of students' understanding of the learning material. As a result, students become less active and feel bored with the lessons given by the teacher (Hayati, *et al.*, 2024).

The problem of students' low cognitive abilities was overcome by researchers by implementing effective learning media so as to increase students' comprehension ability in receiving information while growing their scientific process. Previous research that is relevant to this research is research conducted by (Sulistyowati & Sudek, 2023; Mariani, *et al.,* 2022). The learning media used as a solution to problems by researchers is the *Edugames baamboozle media*. *Edugames* media *baamboozle* is an online learning *platform* that allows students to play while learning so that it will provide a pleasant learning impression for students so that they will be interested in learning (Muhajirin, *et al.,* 2022).

Research using the *Edugames baamboozle learning media* was carried out five meetings starting with giving a pre-test and ending with giving a post-test. From the first meeting to the last meeting the learning process can be completed and run smoothly starting from delivering the material using Power Point media, then the teacher divides the students into 4 groups where each group must work together (Tsurayya & Sukmawati, 2023). After that, the teacher used the *Edugame baamboozle media* as a learning medium by presenting it on a projector screen and each group will answer each question according to the directions given by the teacher (Murti, *et al.,* 2023).

After being given a learning approach using *Edugames baamboozle,* there was a significant change in students' cognitive abilities where the average score for students' cognitive abilities reached 85.0 which was in the high score category. The increase in students' post-test average scores was due to the online game-based *Edugames baamboozle media* using a group game mechanism. Research by Khoiro, *et al*. (2023) supports these findings which shows that the use of *Edugames baamboozle media* has a significant impact in improving students' cognitive abilities.

The advantages of applying media are that it is able to create a pleasant learning experience, allows students to obtain information more easily, helps teachers create a more dynamic and creative learning atmosphere, and strengthens collaboration between students in exploring new ideas (Wahyuni, 2020). Apart from that, using appropriate media can also increase the effectiveness of delivering material, so that students can more easily understand the concepts being taught (Firmadani, 2020).

Based on the discussion that has been described, it can be concluded that the use of *the Edugames baamboozle* learning media has a good influence on the biological cognitive abilities of class X students at SMAN 14 Bone.

CONCLUSION

Based on the results and discussion, the average pre-test data was 39.7 in the low category to 85.0 in the post-test in the high category. Where the hypothesis test shows the value (0.000) is less than the significant value of 0.05 (0.000 <a 0.05). So it can be concluded that the use of *Edugames media baamboozle* has a positive influence on the cognitive abilities of class XI students at SMA Negeri 14 Bone.

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