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The Effect of Power Point-Based Contextual Teaching and Learning (CTL) Strategies on Student Learning Outcomes

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Abstract: This study aims to describe the effect of PowerPoint-Based Contextual Teaching and Learning (CTL) Strategies on Student Learning Outcomes. This research is an experiment with a one-group pretest-posttest design. The research sample was randomly selected with the subject of class XI IPS MA Darul Hikmah NW Jeruk Manis, Central Lombok, totalling 30 students. The data collection instrument is a multiple choice test which consists of 25 questions that have been tested for validity and reliability. The data were then analyzed through the t-test to determine the effect of CTL on student learning outcomes. The results showed that the average pretest score was 71.5, while the posttest was 78.6. The t-test analysis shows that the Sig. (2-tailed) < 0.05, which is equal to 0.002. These results indicate that the implementation of power point-based CTL learning significantly affects student learning outcomes.

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INTRODUCTION

The learning process is expected to create effective learning (Setyosari, 2014; Bistari, 2017). Effective learning is intended to keep students' attention so that they remain focused on the learning process. Effective learning can be designed using interesting methods to make students focus so learning becomes fun and not boring (Anwar, 2017). One strategy that teachers widely use to create effective learning is contextual teaching and learning (Hasibuan, 2014; Wijayanti & Wulandari, 2016; Kasmawati et., 2017). CTL is a learning strategy that empowers students more (Susiloningsih, 2016). Students no longer memorize facts or concepts, but in gaining knowledge, they must work alone, find themselves, and construct new knowledge and skills (Hasibuan, 2014). Using the CTL strategy makes students think more critically, creatively, and independently (Shanti et al., 2018). CTL combines concepts obtained in class with real life to make learning more meaningful and oriented to the learning process (Erni et al., 2020).

Contextual learning gives freedom to students to seek, process and find learning experiences that are more concrete through activities to try, do, and experience for themselves (Tibahary & Muliana, 2018). CTL learning is not exclusive but can be combined with other learning models (Nababan & Sipayung, 2023). One media that can be combined with CTL learning is Powerpoint (Wicaksono et al., 2020; Ariyani & Ganing, 2021; Harahap & Nasution, 2021). Microsoft Office PowerPoint is an application program specifically designed to attractively display multimedia programs (Wulandari, 2022) that are easy to manufacture and use. This application is very popular and widely used by various groups, professionals, academics, practitioners and beginners for presentation activities (Indriyani et al., 2022). Powerpoint is an application program from Microsoft that can be used to make presentations and can be used as a learning medium (Suratman, 2009).

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The use of PowerPoint media in learning has been used to improve student learning outcomes (Defiani et al., 2018). Besides that, PowerPoint learning media can also increase learning demand (Nasir & Jamiludin, 2023), student motivation and study habits (Saidah et al., 2019). Several previous studies have revealed the effect of using power point-based CTL strategies in learning. Suprianto et al. (2016) reported that power point-assisted CTL can improve students' science learning outcomes. In addition, Octavia et al. (2020) revealed that CTL-based PowerPoint media could improve student honesty, discipline and cooperation. Both of these studies need to be completed so that the understanding of the use of PowerPoint media combined with CTL becomes wider. In addition, the two studies also need to be implemented on different subjects, especially for students majoring in social sciences. So far, little research has raised the influence of CTL-based PowerPoint media on social studies students. This study aims to describe the effect of PowerPoint media-based CTL strategies on student learning outcomes.

RESEARCH METHOD

This research is a quasi-experimental study (Ratminingsih, 2010) using a one-group pretest-posttest design (Hastjarjo, 2019). This study used class XI IPS MA Darul Hikmah NW Jeruk Manis, Central Lombok, as the experimental group. The experimental class was given a pretest and a posttest before being given treatment using a power point-based CTL strategy (Table 1). The subjects of this study were 30 students of class XI IPS MA Darul Hikmah NW Jeruk Manis in economics subjects. Data on student learning outcomes were collected through multiple-choice tests totalling 25 questions. Learning outcomes tests have been tested for validity and reliability (Nuswowati et al., 2010). Data on learning outcomes were then analyzed using the t-test (Rasch et al., 2007) to determine the effect of the power point-based CTL strategy on student learning outcomes.

Table 1. Research design

Group	Pretest	Treatment	Postest
XI IPS MA Darul Hikmah	O1	X	O2

Note

O1 : Pretest
X : Learning using power point-based CTL
O2 : Posttest

RESULT AND DISCUSSION

Instrument Validity and Reliability

Student learning outcomes are tested to meet the criteria of validity and reliability. The validity of the test items used the Pearson Product Moment formula (Miftahuddin & Fithriana, 2008). Analysis of the validity of the questions was assisted using the SPSS for Windows program (Anggraini et al., 2022). Decision-making on the validity test is done by comparing the value of the r count (corrected item-total correlation) with the r table at α = 5%. The value of the r table with the number (n) 30 is 0.349. The question is considered valid if the value of r count > r table. Conversely, the question is considered invalid if the value of r count <r table. Based on the results of the validity test using the SPSS program, the value of the r count (corrected item-total correlation) was > 0.349 for all questions. This result

indicates that all test questions are declared valid. For the reliability of questions, if the value of r count (Cronbach's alpha if item deleted) > r table, the question is declared reliable. Otherwise, the item is stated as unreliable. The results of the reliability calculation show that the value of Cronbach's alpha, if the item is deleted for all questions, is > 0.349. Therefore, all questions are declared reliable.

Learning outcomes

This study aims to determine the effect of PowerPoint-based Contextual Teaching and Learning (CTL) strategies on student learning outcomes in class XI Madrasah Aliyah Darul Hikmah NW Jeruk Manis, Central Lombok. The following presents student learning outcomes in the form of pretest and posttest which are shown in Figure 1.

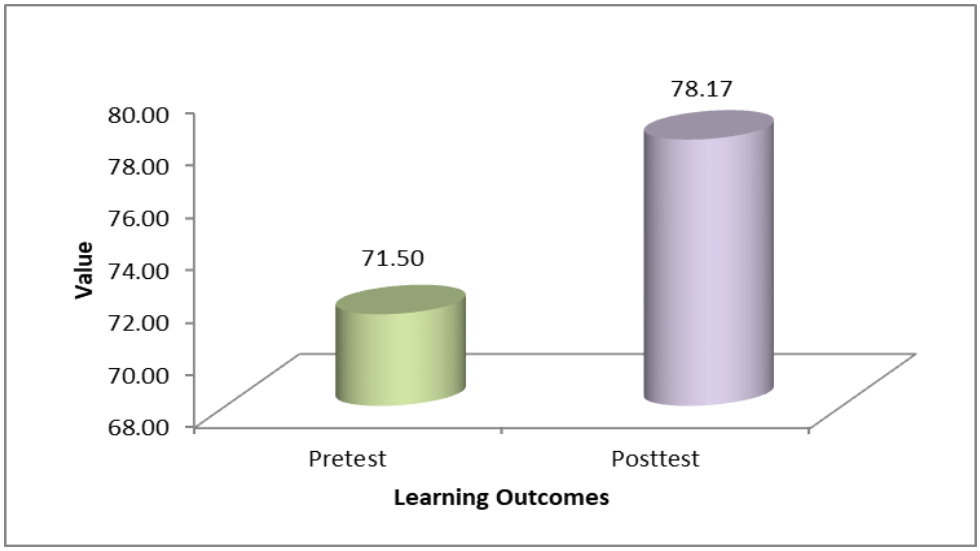

Figure 1. Graph of student learning outcomes

Figure 1 shows student learning outcomes before and after being given treatment using a power point-based CTL strategy. Figure 1 reveals that student learning outcomes before treatment (pretest) have an average value of 71.50, while student learning outcomes after treatment (posttest) have an average value of 78.17. These results indicate that students have better learning outcomes after being given treatment than before treatment. These results need to be confirmed through hypothesis testing.

Hypothesis testing

To find out whether there are differences in student learning outcomes before and after being given treatment, a hypothesis test through the t-test is carried out. Before carrying out the t-test, the prerequisite tests for normality and homogeneity are shown in Table 2.

Table 2. Test for normality and homogeneity of learning outcomes data

Variable	Normality test (Kolomogorov-Smirnov)	Homogeneity test (Levene statistic)
Pretest	Sig. >0.05 (0.136)	Sig. >0.05 (0.140)
Posttest	Sig. >0.05 (0.215)	Sig. >0.05 (0.220)

Table 2 shows the value of Sig. for pretest and posttest data on normality and homogeneity tests > 0.05. These results indicate that the pretest and posttest data on student learning outcomes have a standard data distribution and a homogeneous variance. With these results, the hypothesis test through the t-test can be continued. The results of the t-test analysis are shown in Table 3.

Table 3. Results of the t-test of student learning outcomes

Variable	t-test for Equality of Means				
Learning outcomes	t	Df	Mean Difference	Std. Error Difference	Sig (2-tailed)
	3.921	29	3.99062	1.52357	0.002

The results of the t-test in Table 3 show that the Sig. (2-tailed) < 0.00. These results reveal differences in student learning outcomes before and after treatment using power point-based CTL strategies. These results indicate that the power point-based CTL learning strategy significantly improves student learning outcomes. The results reinforce previous findings by Wasisno (2022), which revealed that CTL learning based on PowerPoint media could improve student learning outcomes in economics learning. It was further revealed that students' PowerPoint media made it easier for students to understand the material being taught so that it could increase student achievement (Harun et al., 2022). The increase in student learning outcomes in this study was allegedly due to the combination of learning strategies, namely CTL and a combination of other learning media, namely PowerPoint. Previous research reported that implementing CTL in learning can improve student learning outcomes (Rahmawati, 2018; Setiawan & Sudana, 2018). Likewise, the application of PowerPoint media in learning has increased student learning outcomes (Wirnawa & Dewi, 2022). It is suspected that with these two combinations (CTL and PowerPoint), student motivation will increase, which in turn can improve student learning outcomes.

CONCLUSION

The results showed that the average pretest score was 71.5, while the posttest was 78.6. Further analysis through the t-test shows that the Sig. (2-tailed) < 0.05, which is equal to 0.002. These results indicate that the implementation of power point-based CTL learning significantly improves student learning outcomes.

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