INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN MULTIDISCIPLINARY EDUCATION

ISSN(print): 2833-4515, ISSN(online): 2833-4531

Volume 02 Issue 12 December 2023

DOI: 10.58806/ijirme.2023.v2i12n03

Page No. 641 - 651

The Effect of the Learning Cycle 7E Model with Prezi Media on Problem Solving Skills and History Learning Outcomes

Oktavia Wahyuni Saputri[1], Nurul Umamah[2]

[1.2] University of Jember & Indonesia

[2]ORCID ID 0000-0002-3589-5014

ABSTRACT: The aim of this research is to determine the effect of the Learning Cycle 7E model and Prezi media on problem-solving skills and history learning outcomes. This research uses a quantitative approach, quasi experimental design with a pretest-posttest non-equivalent control-group design. The sample consisted of 70 students in classes X2 and X4 at Ambulu state high school. Data collection techniques used documentation and tests. The data analysis technique used the ANACOVA test and the LSD (Least Significant Different) follow-up test. The research results of the Learning Cycle 7E model assisted by Prezi media had a better influence on students' problem-solving skills in history subjects. A significant effect can also be seen on the history learning outcomes achieved by students using the Learning Cycle 7E learning model assisted by Prezi media.

KEYWORDS: Learning Cycle 7E, Prezi, Problem Solving Skills, Learning Outcomes

I. INTRODUCTION

Significant technological developments provide quite rapid changes to the order of human life. Currently, the world is entering the digital era of the industrial revolution between digital media, the internet, and traditional industries (Matt & Rauch, 2020: 5). Education in the 21st century will face tougher challenges challenges compared to the previous century. This decade's digital evolution has established the foundation for Industry 5.0, where humans and smart systems collaborate to achieve mass personalization, while improving work efficiency (Taj and Jhanjhi, 2022: 286). Society 5.0 ensures that everyone's needs are met regardless of obstacles (Aprillisa, 2020, 543). Schools should not be content with their current achievements and must constantly innovate to achieve excellence and stay ahead of their competitors (Darmaji, et al. 2019: 565). The birth of the Industrial Revolution 5.0 demands the use of technology in teaching and learning activities in the world of education.

Historical education is very necessary to build character. But in education, learning history has its challenges. History is a very difficult and boring subject to understand because various facts must be memorized (Woei, et al, 2021:1). In the 21st century some students do not value history as a valuable subject in their lives, do not see the value of learning, tend not to study history as well as they can (Umamah, et al, 2021: 2). Learning history at school is fun, but it will be boring or less fun learning if educators apply a monotonous learning system, both in terms of the material provided, learning methods, and learning media that are less supportive in carrying out the teaching and learning process. This is a problem that needs to be addressed given the importance of learning history.

Based on the results of pre-observation, the researcher found that the average daily test scores of students in Ambulu State High School were still low, of the 10 classes observed, each had an average score, class X1 1 39.61, class X2 2 38.27, class X3 38.00 class X4 39.00, class X5 39.58, class X6 40.00 class X7 38.00, class X8 41.50, class X9 38.50 while class X10 39.00. Learning and teaching activities in class still tend to be monotonous because educators do not use learning models, only teach with lecture methods, and are not assisted by learning media. Low learning motivation and student boredom will result in problem solving skills and low student learning outcomes.

Students in the technological era like now, will be faced are students who are born and developed in the digital era, so like it or not, like it or not, educators must have high technological literacy. The future generation, known as Generation Z or Gen Z, is a generation that optimizes their learning needs and desires (Wahyuningtyas, 2019: 7). Learning in the 21st century is learning that produces critical thinking skills and problem-solving skills, as well as information and communication skills (Schrum, et al., 2015: 69). One of optimizing the learning needs of generation Z is using learning media that can be accessed online and offline so that it can improve learning outcomes.

Problem solving skills in learning can encourage students to do something from real experience (Kirmizi, Saygi, & Yurdakal, 2015: 657), encourage learning activities to be active (Phumeechanya & Wannapiroon, 2014: 116), or can develop the learning process in the technology-supported learning environment (Neo, Neo, Tan, & Kwok, 2012: 26). Good problem-solving skills will affect student learning outcomes. Learning outcomes are the output of input processing. The input of the system is like some kind of information while the output is performance and actions. These are developed with various innovative and creative learning strategies (Utomo, et al, 2020: 467). Complete and comprehensive historical explanations from various approaches, as well as by incorporating various historical contents and involving other auxiliary sciences, then combined with the use of various innovative technology-based learning models or media, will undoubtedly make history learning richer, meaningful, and meaningful. for the lives of the nation's children (Kemendikbud, 2022: 233-234). The learning model used is expected to integrate various subjects taught, so that learning activities can be carried out collaboratively, oriented towards contextual problem-solving skills and stimulate students to reason critically and creatively (Kemendikbud, 2022: 208). The learning model that can improve problem solving skills skills and learning outcomes is the Learning Cycle 7E model.

The Learning Cycle 7E model is a series of activity stages organized in such a way that students can understand the that must be realized in learning by being actively involved (Ngalimun, 2012: 145). Eisenkraf (2003: 57) distinguishes the Learning Cycle (Learning Cycle) into 7 stages, elicit (raising students' initial knowledge), Engage (explaining learning objectives, materials, providing motivation), Explore (organizing and defining tasks related to problems), Explain (collect information, obtain explanations and problem solutions), Elaborate (prepare and design work results), Evaluate (evaluate or present), Extend (reflect and expand). This is what is known as the Learning Cycle 7E. Dwihapsari, Sumardi & Umamah (2020: 11) states that, problem solving skills can be improved with the help of e-modules based on the Learning Cycle 7E.

The use of technology in 21st-century learning cannot be separated as a fulfillment of Generation Z. This is because Generation Z is synonymous with seeking real and meaningful experiences, being more independent, and being assisted by online means (Schwieger & Ladwig, 2018; Umamah, 2017). Prezi is an application that has been widely used in the world of education. This application is almost like PowerPoint in terms of making presentations. These applications provide multiple options for storing and creating digital achievements online (Perron & Stearns, 2010). Prezi is made more accessible for students and teachers through a free online format. Students can view Prezi during and after class by using the online link (Solehudin, et al. 2020: 4). The presentation on Prezi media is very appropriate to be applied in the Learning Cycle 7E model which is expected to be able to improve problem solving skills and student learning outcomes.

II. METHOD

This study used a quantitative method with the type of experimental research. The research design used a quasi-experimental design. In quasi-experimental design, there are two forms of quasi-experimental designs, namely Time Series Design and Nonequivalent Control Group Design (Sugiyono, 2021).

The study consisted of 2 variables, namely the dependent and independent variables. The following is an explanation of the independent and dependent variables.

1. Free Variables
   As a variable that has the role of being the influence of "X" (Creswell, 2009:50). There are 2 independent variables in the study, namely the Learning Cycle 7E Model as the 1st independent variable and 2nd independent variable Problem Based Learning.
2. Bound Variable

Is a variable that depends on or is influenced by the independent variable "Y" (Creswell, 2019: 50). There are 2 dependent variables in the study, namely Problem-Solving Skills and Learning Outcomes. The population in this study were students of class X at Ambulu state high schoolwith a total of 370 students and the sample in this study was class X10 as an experimental class with a total of 36 students and class X 4 as a control class with a total of 37 students**.** The instruments used are "test" and "questionnaire". The test instrument is used to measure problem solving skills skills and the questionnaire instrument is used to measure learning outcomes. Then the validity test is carried out, content validity is a measuring tool that can be used or used by carrying out comparisons between the contents of the instrument and the subject matter, with the resulting validity criteria as follows:

Table 1. Classification Validity Coefficient

Validity Coefficient	Criteria
$0{,}80 < r_{xy} \leq 1{,}00$	Very high
$0{,}60 < r_{xy} \leq 0{,}80$	Hight
$0{,}40 < r_{xy} \leq 0{,}60$	Currently

$0,20 < r_{xy} \leq 0,40$	Low
$0,00 < r_{xy} \leq 0,20$	Very low
$r_{xy} \leq 0,00$	Invalid

The reability of the calculation based on the reability criteria coefficient table, below:

Table 2. Reliabilty Coefficient Category

Reliability Coefficient	**Criteria**
$0,80<r_{11}\leq1,00$	Very High Reliability
$0,60<r_{11}\leq0,80$	High Reliabilty
$0,40<r_{11}\leq0,60$	Medium Reliabilty
$0,20<r_{11}\leq0,40$	Low Reliability
$-1,00<r_{11}\leq0,20$	Reliabilitas Very Low Reliability

Source: Guilford (1956:145)

Data analysis techniques used in this study include the normality test, linear regression test, ANCOVA test, LSD/BNT test with the help of SPSS 22 for windows.

III. RESULT

Based on the results of pre-observation, researchers found that the average daily test scores of students in Ambulu State High School were still low, of the 10 classes observed, each had an average score, class X1 1 39.61, class X2 2 38.27, class X3 38.00 class X4 39.00, class X5 39.58, class X6 40.00 class X7 38.00, class X8 41.50, class Pre-observation in class Low learning motivation and student boredom will result in low problem solving skills and student learning outcomes. What students will face in the technological era like now are students who were born and developed in the digital era, so whether they like it or not, like it or not, educators must have high technological literacy. The future generation, known as Generation Z or Gen Z, is a generation whose learning needs and desires are optimized (Wahyuningtyas, 2019: 7). The role of history educators is to build bridges between the past, present, and future by stimulating students' spirituality and reasoning through imaginative, creative, critical and reflective skills that rely on authentic sources (Kemendikbud, 2022: 235). The challenge for educators in the 21st century is how to teach several skills that are demanded in that century. 21st-century skills are (1) life and career skills, (2) learning and innovation skills, and (3) Information media and technology skills (Partnership for 21st Century Skills, 2010). These three skills are summarized in a scheme called the 21st-century knowledge-skills rainbow (Trilling and Fadel, 2009). To deal with the development of recent technology, individuals must have these skills to create meaningful learning(Umamah, et al., 2020: 2). One of the optimizations for Generation Z's learning needs is implementing learning models and using learning media that can be accessed online and offline so that it can improve learning outcomes and problem-solving skills.

A. Result of Instrument Test

The research must have the principle of measuring, so measuring tools are needed. According to Sugiyono (2019: 166) a research instrument is a tool used to understand the observed natural and social events. This study used instruments in the form of tests and questionnaires. Students' assessments based on their performance analysis involve written tests, and multiple choices, and regular assessments (Umamah, et al., 2020: 6). The test instrument was chosen to measure learning outcomes and the questionnaire instrument was used to measure problem solving skills skills. The problem-solving questionnaire consists of 20 questions which are arranged based on indicators of problem-solving skills, this questionnaire is assisted by a Likert scale model which has answer options namely Disagree, Disagree, Undecided, Agree, Strongly Agree. The learning outcomes test uses multiple choice with a total of 20 questions which refer to indicators of cognitive learning outcomes C4 (analyze) in which each item has the same score. Instrument trials were carried out in class X1 at Ambulu State High School. The experimental and control classes were given a pretest to understand the initial conditions of the difference between the control group and the experimental group.

a. Validity Test

Based on the results of the problem-solving validity test using a questionnaire instrument with a total of 20 questions and 30 respondents in class X1, the correlation value obtained was the same or higher than rtab, with a sig (significance) level of less than 5% (0.05). So that the item can be declared valid. Pretest and posttest learning outcomes with a multiple-choice instrument totaling 20 questions in class X1 and the respondent's value of rcount is higher than rtable with a sig (significance) of less than 5% (0.05) then declared valid. It can be concluded that all items from the problem-solving questionnaire, the pretest of learning outcomes, and the posttest of learning outcomes are stated to be valid and can be tested for reliability.

b. Reliabilty Test

The reliability test is used to see the level of reliability of the questions by doing trials. So if the reliability of the instrument is stated to be good it can provide consistent measurement results every time it is applied.

Table 3. Instrument Reliability Test Results on Problem Solving Skills

Research Variable	N	Alpha Cronbach's	Information
Angket problem solving skills	30	0,759	Hight Reliabilty

Source: Primary data processed

Tabel 4. Instrument Reliability Test Results on Learning Outcomes

Research Variable	N	Alpha Cronbach's	Information
Multiple Choice Tests on Learning Outcomes Pretest	30	0,741	Hight Reliabilty
Multiple Choice Tests on Learning Outcomes Posttest	30	0,748	Hight Reliabilty

Source: Primary data processed

According to Table 3 the results of the Reliability Test, the items in the problem solving skills research instrument, have high reliability using Cronbach's Alpha formula of 0.759 in the category $0.60<r11\leq0.80$ (high reliability). The reliability test of learning outcomes in Table 4 shows high reliability with Cronbach's Alpha 0.741 Pretest and 0.748 Posttest in the category $0.60<r11\leq0.80$ (high reliability). This shows that the instrument is reliable and has a good consistency.

B. **Data Analysis**

The data analysis technique in this study used ANACOVA to test the effect of the Learning Cycle 7e model assisted by Prezi media on problem solving skills and learning outcomes with the pretest value as the covariate, while to measure the magnitude of the effect a follow-up test was carried out, namely LSD. The following are several test stages that must be carried out in data analysis:

a. Analysis Prerequisite Test and Assumption Test

Analysis prerequisite test To determine the statistical test that will be required, the analysis prerequisite test to be carried out is as follows:

1. Normality test

With the help of the normality test, data from research results can be seen to have a normal distribution or not. This test was carried out on pretest and posttest data in two X10 classes as the experimental class with the treatment of the Learning Cycle 7E model assisted by Prezi media and class X4 as the control class with the treatment of the Problem Based Learning model. Calculation of the normality of the distribution of each sample group used the Kolmogorov Smirnov test with the help of the SPSS 22 for windows software at a significance level of 5%. So that H0 is accepted if the sig. > 0.05 (data normally distributed) and H0 is rejected if the sig. ≤ 0.05 (data not normally distributed).

Table 5. Experiment Class Normality Test Results

Data	Df	Statistic	Sig.	Information
Data before treatment problem solving skills	35	113	0,700	Normal Distribution
Data after treatment problem solving skills	35	144	0,159	Normal Distribution
Data Pretest Learning Outcomes	35	105	0,454	Normal Distribution
Posttest Data of Learning Outcomes	35	156	0,353	Normal Distribution

Source: Primary data processed

According to table 5 the results of the normality test in the experimental class, the data obtained before the problem-solving skills treatment is normally distributed with a significance of 0.700 > 0.05, then H0 is accepted. While data acquisition after problem solving skills treatment is normally distributed with a significance of 0.159 > 0.05, then H0 is accepted. In the results of the normality test, the pretest data acquisition of learning outcomes is normally distributed with a significance of 0.454 > 0.05, then H0 is accepted. While the posttest data obtained is normally distributed with a significance of 0.353 > 0.05, then H0 is accepted. So that the results of the normality test for problem solving skills data acquisition and learning outcomes in the experimental class are normally distributed, which means it is feasible to be analyzed using parametric statistics.

Table 6. Control Class Normality Test Results

Data	Df	Statistic	Sig.	Information
Data before treatment problem solving skills	35	120	0,631	Normal Distribution
Data after treatment problem solving skills	35	127	0,159	Normal Distributionl
Data Pretest Learning Outcomes	35	107	0,982	Normal Distribution
Posttest Data of Learning Outcomes	35	173	0,146	Normal Distribution

Source: Primary data processed

Based on table 6. the results of the normality test in the control class above, the data obtained before the problem solving skills treatment is normally distributed with a significance of 0.631 > 0.05, then H0 is accepted. While data acquisition after problem solving skills treatment is normally distributed with a significance of 0.159 > 0.05, then H0 is accepted. In the results of the normality test, the pretest data acquisition of learning outcomes is normally distributed with a significance of 0.982 > 0.05, then H0 is accepted. While the acquisition of posttest data on learning outcomes is normally distributed with a significance of 0.146 > 0.05, then H0 is accepted. So that the results of the normality test for problem solving skills data acquisition and learning outcomes in the control class are normally distributed, which means it is feasible to be analyzed using parametric statistics.

2. Homogeneity Test of Regression

This test will be carried out to see whether the population variance is homogeneous or not. A series of data is said to be homogeneous, if in each sub-group of data, there is no difference, either in the mean value or the variance value of the other sub-groups in the data set (Soewarno, 1995). Decision-making is based on a significance level of 5%, so that H0 is accepted if the value is sig. > 0.05 (homogeneous sample data) and H0 is rejected if the sig. ≤ 0.05 (sample data is not homogeneous).

Table 7. Results of Regression Homogeneity Test of Problem Solving Skills

DATA	Type III Sum of Squares	Df	Mean Square	F	Sig.
Class data before treatment	120.267	1	120.267	12.455	.003

Source: Primary data processed

Data acquisition before problem solving skills treatment is homogeneous in distribution with a significance value of 0.547 > 0.05, then H0 is accepted. So that the results of the homogeneity test on the value before the problem solving skills treatment were stated to be homogeneous, which means that there was no difference or influence between the pretest values of the control class and the experimental class.

Table 8. Results of Regression Homogeneity Test of Learning Outcomes

DATA	Type III Sum of Squares	Df	Mean Square	F	Sig.
Data class pretest	89.763	1	89.763	0.850	0.393

Source: Primary data processes

According to table 8 the results of the homogeneity test on the assessment of pretest learning outcomes carried out in class X10 as an experimental class with the treatment of the Learning Cycle 7E model assisted by Prezi media and class X4 as the control class with the treatment of Problem Based Learning models, the acquisition of Pretest data is homogeneous with significance value 0.393 > 0.05, then H0 is accepted.

3. Linearity Test

The linearity test aims to determine whether there is a linear relationship between the covariates and the dependent variable by using the F-test through the SPSS Version 22 software program for windows. Decision making in a linearity test can refer to 2 things, namely comparing the significance value with the probability value. If the significance value is <0.05, it means that there is a significant linear relationship between the covariates and the dependent variable. If the significance value is > 0.05, it means that there is no significant linear relationship between the covariates and the dependent variable.

Table 9. Linearity Test Result of Problem-Solving Skills

DATA	Type III Sum of Squares	Df	Mean Square	F	Sig.
Class data before treatment	4.550	1	4.550	0.189	0.547

Source: Primary data processed

Based on table 9 above, shows that F is calculated at df1 = 1 which has a value of 12.455 sig. of 0.003 <0.05, based on the data above there is a significant linear relationship between the covariates and the dependent variable with the assumption of linearity from the regression having strong reasons for the variables before being treated as covariates.

Table 10. Linearity Test Result of Learning Outcomes

DATA	Type III Sum of Squares	Df	Mean Square	F	Sig.
Pretest	40.653	1	40.653	2.645	.001

Source: Primary data processed

Based on table 10 above, it shows that F is calculated at df1 = 1 which has a value of 2,654 sig. of 0.001 <0.05, based on the data above there is a significant linear relationship between the covariate and the dependent variable with the assumption of linearity from the regression having strong enough reasons for the pretest variable as a covariate.

C. **Hyphothesis Test**

In this study, the pretest and posttest data from the control class and the experimental class will be tested for hypotheses using ANACOVA and the LSD (Least Significant Different) test with the help of the SPSS 25 software program for windows.

a. ANACOVA Test

The ANACOVA test was carried out to determine whether there was an effect of critical thinking skills and learning outcomes taught by the Learning Cycle 7E learning model in the experimental class and the problem-based learning model in the control class with the pretest value as the covariate. The data used for hypothesis testing is data that has a normal and homogeneous distribution.

The following are the criteria for concluding hypothesis testing using the ANACOVA test:

a) The sig value level > 0.05 H0 = There is no significant effect on problem solving skills skills and learning outcomes that are taught using the Learning Cycle 7E model.
b) The sig value level < 0.05 Ha = There is a significant influence on problem solving skills skills and learning outcomes that are taught using the Learning Cycle 7E model.

Tabel. 11. Tabel Effect Size

Effect Size	Category
0 ≤ 0,2	Small
0,2 ≤ 0,5	Medium
0,5 ≤ 0,8	Big
≥ 0,08	Very big

Source: Primary data processed

Table 12. ANACOVA Test Result of Problem Solving Skills

Tests of Between-Subjects Effect						
Dependent Variable: Posttest						
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	108.129[a]	2	108.129	4.989	.000	.068
Intercept	18403.214	1	18403.214	849.192	.000	.926
Pretest	108.129	1	108.129	4.989	.001	.068
Learning Model	1473.657	1	656.165	41.500	.001	.629
Error	19985.000	68	21.671			
Total	86253.000	70				
Corrected Total	1581.78	69				
a. R Squared = .460 (Adjusted R Squared = .680)						

Source: Primary data processed

The results of the Corrected Model column show the results of sig 0.000 ≤ 0.05 with the pretest stated and the learning model influences the problem-solving skills skills of students in history class X class. The results of the learning model column are sig 0.001 ≤ 0.05 Then H0 is rejected, and Ha is accepted. The magnitude of the influence of the learning model used can be seen from the partial eta squared value of 0.629 with an effect size level of 0.5 ≤ 0.8 which means large. So this statement concludes that the Anacova test has been fulfilled.

Table 13. ANACOVA Test Result of Learning Outcomes

Tests of Between-Subjects Effects						
Dependent Variable: Posttest						
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	4736.008[a]	2	2368.004	15.506	.000	.066
Intercept	12280.459	1	12280.459	80.415	.000	.846
Pretest	143.308	1	143.308	.939	.001	.078
Learning Model	3974.573	1	3974.573	26.026	.000	.654
Error	10231.853	68	152.714			
Total	450417.000	70				
Corrected Total	14967.843	69				

Source: Primary data processed

The results of the Corrected Model column show the results of sig 0.000 ≤ 0.05 with the pretest stated and the learning model influences student learning outcomes in history class X class. The results of the learning model column are sig 0.000 ≤ 0.05 Then H0 is rejected, and Ha is accepted. The magnitude of the influence of the learning model used can be seen from the partial eta squared value of 0.654 with an effect size level of 0.5 ≤ 0.8 which means large. So this statement concludes that the Anacova test has been fulfilled. In conclusion, there is a significant influence on learning outcomes that are taught using the Learning Cycle 7E model.

B. LSD Test

The LSD test is the simplest and most used procedure for testing differences between treatment means. The LSD test is a further procedure to find out which treatments are significantly different if the null hypothesis is rejected (Montgomery, 2011).

Table 14. LSD Test Result of Problem-Solving Skills

Multiple Comparisons				
Dependent Variable: Grade LSD				
(I) class	(J) Class	Mean Difference (I-J)	Std. Error	Sig.
pre- test control class	post-test control class	-2.571	3.066	.003
	pre-test experiment class	-6.200*	3.066	.045
	post- test experiment class	-22.400*	3.066	.000
pre-test experiment class	pre-test control class	6.200*	3.066	.045
	post- test control class	3.629	3.066	.039
	post-test experiment class	-16.200*	3.066	.000
Multiple Comparisons				
Dependent Variable: Grade LSD				
(I) class	(J) class	95% Confidence Interval		
		Lower Bound		Upper Bound
pre- test control class	post-test Control Class	-8.64		3.49
	pre-test experiment class	-12.26*		-.14
	post- test experiment class	-28.46*		-16.34
pre-test experiment class	pre-test control class	.14*		12.26
	post- test control class	-2.44		9.69
	post-test experiment class	-22.26*		-10.14

Source: Primary data processed

According to the LSD (Least Significant Different) Advanced Test results table, the data before the control group treatment in Table I and the data after the control group treatment in Table J, there is a difference with a significance of 0.003 which is smaller than 0.05 and the mean difference (I-J) (average difference) of 2,571. Meanwhile, the experimental group's posttest data in Table I and the experimental group's pretest data in Table J show a difference with a significance of 0.000, smaller than 0.05 and a mean difference (I-J) of 6,200, which means there is a difference in the average of the test. LSD that from the mean difference value of the experimental group is superior to the control group. Based on the results of the two groups, the experimental group which was taught using the Learning Cycle 7e model assisted by Prezi had better problem-solving skills than the control group which applied the Problem-Based Learning model.

Table 15. LSD Test Result of Learning Outcomes

Multiple Comparisons						
Dependent Variable: Grade						
LSD						
(I) class	(J) class	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
pre- test experiment class	pre- test control class	.086	.926	.026	-1.74	1.92
	post- test experiment class	-9.543*	.926	.000	-11.37	-7.71
	post- tes control class	-7.057*	.926	.000	-8.89	-5.23
pre- test control class	pre- test experiment class	-.086	.926	.001	-1.92	1.74
	post- test experiment class	-9.629*	.926	.000	-11.46	-7.80
	pre- test control class	-7.143*	.926	.000	-8.97	-5.31

Source: Primary data processed

According to the results table for the pretest data for the experimental group in Table I and the posttest data for the experimental group in Table J, there is a difference with a significance of 0.000 which is less than 0.05, and the mean difference (I-J) (mean difference) is 9,543. LSD (Least Significant Different) Follow-up Test for the pretest data for the control group in Table I and the posttest data for the control group in Table J, there is a difference with a significance of 0.00 less than 0.05 and a mean difference (I-J) (average difference) of 7,143 which means that there is an average difference from the LSD test that the experimental group is superior to the control group in terms of the mean difference. Based on the results of the two groups, the experimental group which was taught using the Prezi-assisted Learning Cycle 7e model had better learning outcomes than the control group which applied the Problem Based Learning model.

IV. DISCUSSION

The Learning Cycle 7E model puts forward constructivism principles which emphasize motivation, activeness, critical thinking, systematic, creative, and problem solving, so that it is related to problem solving indicators, namely logical thinking, critical thinking, systematic thinking, active involvement, solving and is related to indicators of learning outcomes from the cognitive domain at the level of analysis, namely differentiating, organizing, attributing. so that the 7E Learning Cycle Model can develop and expand students' level of thinking. The 7E Learning Cycle model can develop learning motivation because students are actively involved in teaching and learning activities. Helps improve students' scientific attitudes which can be stimulated by the learning cycle of the Learning Cycle 7E model. Learning will also be more meaningful for students when this model is applied. Thus, the 7E Learning Cycle model can influence students problem solving abilities and the learning outcomes they obtain.

This is also related to the syntax of the Learning Cycle 7E learning model which involves students actively going through seven phases of learning. This certainly has a vital role in optimizing the development of students knowledge. Prior knowledge possessed by students certainly requires stimulus so that it can be developed according to learning objectives.

In this research, material from ancient human life and the origins of the ancestors of the Indonesian people (Melanesia, proto, and deuteron Malay) was used as one of the tests. Of course, this material needs to be adapted to the student's initial knowledge. Then students need to be involved in the second phase, namely Engange. Engage is an idea, experience, and learning plan. The ideas conveyed by students are also combined with their learning experiences so that they can be used to analyze students' learning characteristics. After that, it is supported by learning planning that is appropriate to the student's character and learning objectives. Then proceed to the next phase, namely Explore. Explore is a phase that takes students to gain knowledge through direct experience related to the concept they want to understand. This is supported by various learning plans that have been carried out previously. Followed by Explain, which is a phase that includes an invitation to students to explain the initial definitions and concepts obtained

during the exploration phase. Prior knowledge students are stimulated to enrich their knowledge so that they can explain the initial definitions and concepts that have been obtained previously. Continuing, Elaborate is a phase whose aim is to bring students to use definitions, concepts, symbols, or skills in problems related to examples from the lessons they understand. Of course, initial knowledge or Prior knowledge is complemented by various new knowledge according to the results found during learning. Students also need to make an analogy of the knowledge they receive with various phenomena around them. After that, Evaluation is the evaluation phase of the learning outcomes that have been implemented. The various stages that have been carried out previously are evaluated so that deficiencies in each stage passed previously can be found. Lastly, Extend, is a phase that aims to search, discover, think, and explain examples of the application of concepts that have been understood and this activity can encourage students to explore the relationship between concepts that are understood and other concepts that have been understood.

Learning using the Learning Cycle 7E model with Prezi media in class X10. At the stage where the teacher asked a simple question about the origins of Indonesia's ancestors, the students enthusiastically raised their hands to answer the question given by the teacher. Engage stage, in this phase, the educator explains the origins of Indonesia's ancestors using Prezi media, and students actively respond to the educator's explanation. Explore stage, at this stage students and their group of friends collaborate to analyze problems regarding the origins of Indonesia's ancestors, by completing the table provided on the student worksheet. Explaining stage, at this stage students explain the results of their discussion represented by 2 group members. Elaborate stage, in this phase educators form groups again randomly to complete new tasks regarding the life of ancient humans in Indonesia. In the evaluation stage, students fill in the formative evaluation on the student worksheet independently. Advanced stage, In this stage the educator directs students to independently write conclusions from learning activities.

The results of the data analysis that have been described in the results section are consistent with the application of the Learning Cycle 7E model in the experimental class which has more influence on problem solving skills and student learning outcomes because there are differences in the learning syntax of the Learning Cycle 7E which is not owned by problem-based learning. as follows:

1. Elicit, in this first stage students in the experimental class were given basic questions, pictures, and videos about the material of early human life and the origins of Indonesian ancestors to bring in students' initial knowledge, fostering high curiosity about the material to be studied. taught. In the control class in the first stage, the syntax used is to orient students to problems so that students are less interested in participating in learning and teaching activities because they are directly faced with problems.
2. Engage, at this stage, the educator focuses the attention of students in the experimental class by providing explanations and playing videos about learning material using Prezi media so that students are very enthusiastic about participating in learning and teaching activities because previous learning did not use media. Meanwhile, in the control class in the second stage, the syntax used was problem exploration, Students determined and made assumptions about the application of the problems that had been applied, so students felt bored because learning seemed monotonous.
3. Extend, in this last stage, after evaluating the teacher and students reflect and expand on the material that has been studied today and provide a grid of material that will be studied in subsequent learning activities so that students can prepare for further learning activities. Meanwhile, in the control class, the syntax used was to analyze and evaluate the problem-solving process, so that students only understood today's learning activities but had no provisions for further learning activities.

V. CONCLUSION

There is a significant influence of the Learning Cycle 7E model on students' problem-solving skills in history subjects. The magnitude of the influence of the learning model on problem solving skills can be seen from the partial eta squared value in the learning model column with a value of 0.629, which is classified as having a large influence on the application of the Learning Cycle 7E model on students' problem-solving skills in class X history subjects. a. Students who were taught using the Learning Cycle 7E model in the experimental class had better problem-solving skills than those taught using the problem-based learning model in the control class. This is in line with the results of problem-solving from assignments given by educators on student worksheets (LKPD). In the experimental class, all individual and group assignments were completed well on the LKPD. Whereas in the control class, several assignments were still vacant in the LKPD.

There is a significant influence of the Learning Cycle 7E model on student learning outcomes in class history subjects. The magnitude of the influence of the learning model on learning outcomes can be seen from the partial eta squared value in the learning model column of 0.654, which is classified as having a large influence on the application of the Learning Cycle 7E model on the learning outcomes of students in class X history subjects. Students who were taught using the Learning Cycle 7E model in the experimental class had better learning outcomes than those taught using the problem-based l1earning model in the control class. This is in line with the knowledge of students in the experimental class at cognitive level C4 differentiating, organizing, and attributing, whereas in the control class, students tend not to be able to express the ideas or values underlying the material, so they do not meet the indicators of cognitive level C4.

REFERENCES

1) Aprillisa, E. 2020. Realizing Society 5.0 to Face the Industrial Revolution 4.0 and Teacher Education Curriculum Readiness in Indonesia. Journal Proc Internet Conf Sci Engin. Vol.3
2) Creswell, J.W. 2009. Research Design: Qualitatif, Quantitative, and Mixed Methods Approaches. Third Edition. United States of America: Sage Publications.
3) Darmaji, Mustiningsih and Arifin, I. 2020. Quality Mangement Education in the Industrial Revolution Era 4.0 and Society 5.0. Journal Advances in Social Science, Education and Humanities Research. Vol. 382
4) Dwihapsari, Ica S, P., Sumardi & Umamah, N. 2020. Development of E-modules Based on Learning Cycle 7E to Improve problem solving skills skills in Indonesian History Using Model 4D. Skripsi
5) Eeisenkraft, Arthur. 2003. "Expanding the 5E Model". The Science Teacher. Vol.70 No. 6
6) Kemendikbud. 2022. Capaian Pembelajaran Pada Pendidikan Anak Usia Dini, Jenjang Pendidikan Dasar, Dan Jenjang Pendidikan Menengah Pada Kurikulum Merdeka. Jakarta: Kemendikbud
7) Kirmizi, F. S., Saygi, C., & Yurdakal, I. H. 2015. Determine The Relationship Between the Disposition of Critical Thinking and The Perception About problem solving skills skills. Procedia - Social and Behavioral Sciences, 191, 657–661
8) Ngalimun. 2013. Strategi dan Model Pembelajaran. Yogyakarta: Aswaja Pressindo.
9) Nuhoglu, H., & Yalçin, N. 2006. The Effectiveness of The Learning Cycle Model to Increase Students' Achievement In The Physics Laboratory. Journal of Turkish Science Education. Vol 3(2)
10) Perron, B. E., & Stearns, A, G. 2011. A Review of Presentation Technology: Prezi. Research on Social Work Practice, 21(3), 376-377.
11) Phumeechanya, N., & Wannapiroon, P. 2014. Design Of Problem-Based with Scaffolding Learning Activities In Ubiquitous Learning Environment To Develop Problem-Solving Skills. Procedia - Social and Behavioral Sciences, 116, 4803–4808
12) Rahmawati. A, Kartono & Hidayah. 2019. Algebraic Thinking Ability Based on Mathematics Disposition in Learning Cycle 7E model. Journal Mathematics of Education Research. Vol.8 No.1.
13) Rusyfian. Z. 2016. Prezi Solusi Presentansi Masa Kini. Bandung: Informatika Bandung.
14) Schrum, L., Davis, N., Lund, A., & Jacobsen, M. (2015). Partnership for 21st Century Skills. AERA 2015 Conference Invited Panel for SIG TACTL., 16–20
15) Seels, B.B & Richey, R.C. 2002. Intructional Technology: The Definition and Domains of The Field. Bloomington: Association for Educational Communiations and Technology
16) Seibert, Susan A. 2021. Problem Based Learning: A Strategy to Foster Generation Z's Critical Thinking and Persevarance. Teaching and Learning in Nursing. –
17) Shahroom, A. A., & Hussin, N. 2018. Industrial Revolution 4.0 and Education. International Journal of Academic Research in Business and Social Sciences. Vol. 8 (9)
18) Solehudin, et al. 2019. Pemanfaatan Media Pembelajaran Prezi Berbasis Cloud Pada Materi Pai Bahasan Abbasiyah. Jurnal Sistem Informasi Berbasis Komputer. Vol.7 No.2
19) Sornsakda, S., Suksringarm, P., & Singseewo, A. (2009). Effects of Learning Environmental Education Using the 7E-Learning Cycle with Metacognitive Technique and Theachers Handbook Approaches on Learning Achievment, Integrated Science Process skills and Critical Thinking of Mathayomsuksa 5 Students with Different Learning Achievment. Pakistan Journal of Social Sciences. Vol.6 No.5
20) Taj, Imran and Jhanjhi, NZ. 2022. Toward Industrial Revolution 5.0 and Explainable Artificial Intelligence: Challanges and Oppoturnities. International Journal of Computing. Sys. 12 No.1
21) Sugiyono. 2021. Metode Penelitian Kuantitatif. Bandung; Penerbit Alfabeta
22) Sugiyono. 2021. Metedologi Penelitian Kuantitatif, Kualitatif dan R&D. Bandung: Penerbit Alfabeta.
23) Umamah, N. 2018. Perencanaan Pembelajaran. Jember : UPT Percetakan & Pernerbitan Universitas Jember
24) Umamah, N, et al. 2020. Need Assesment and Performance Analysis on Innovative, Adapative and Responsive Curriculum Development Geared to Life Skiils. IOP Cond. Series: Earth and Enviromental Science 485
25) Umanah, N., et al. 2020. Teacher Perspective : Innovative, Adaptive and Responsive Instructional Design Aimed at Life skills. IOP Conf. Series: Earth and Environmental Science 485
26) Umamah, N., Sumardi., R, A Surya & Mufidda. (2021). Teachers' ability analysis of developing innovative instructional design. IOP Conf. Series: Earth and Environmental Science 747
27) Umamah, N. 2017. Kapita Selekta (Pendidikan) Sejarah Indonesia. Yogyakarta: Penerbit Ombak
28) Utomo, Anjar P., et al. The Effectiveness of STEAM-Based Biotechnology Module Equipped with Flash Animation for Biology Learning in High School. International Journal of Instruction. Vol. 13 No. 02
29) Wahyuningtyas, Novy R. 2019. Pengembangan E- modul Pembelajaran Sejarah Berbasis problem solving skills Untuk Meningkatkan High Order Thinking Skill (HOTS) dengan Model 4D. Skripsi

30) Woei, Ritchie L J., et al. 2021. Integrasi Permainan Media Word Wall dalam Pendidikan Sejarah. Malaysian Journal of Social Sciences and Humanities. Vol. 6 No. 4
31) Young, M. 1989. The Technical Writer's Handbook. Mill Valley, CA: University Science