

# The Effectiveness of Self-Directed Learning and Discovery Learning Assisted by Focusky Media on Students' Historical Analysis and Learning Outcomes

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# THE EFFECTIVENESS OF SELF-DIRECTED LEARNING AND DISCOVERY LEARNING ASSISTED BY FOCUSKY MEDIA ON STUDENTS' HISTORICAL ANALYSIS AND LEARNING OUTCOMES

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## ABSTRACT

This research aims to determine the effectiveness of the self-directed learning model and the discovery learning model assisted by focusky media on the historical analysis abilities and learning outcomes of students in history subjects. This type of research is a quasi-experiment with a sample size of 65 students at SMA Negeri 1 Bangorejo. The results of the t-test of historical analysis ability and learning outcomes, it shows that there is a significant difference with the difference in the average posttest score for historical analysis ability 2.733 and the difference in the average posttest score for learning outcomes 3.059. Then, the historical analysis effectiveness test, it shows a medium category of 0.050, while the learning outcomes show a medium category of 0.053. This shows that experiment class 1 is better than experiment class 2 and the self-directed learning model has proven to be effective in improving historical analysis skills and learning outcomes.

**Keywords:** *self-directed learning, discovery learning, Focusky, historical analysis, learning, outcomes*

## INTRODUCTION

The world of education is experiencing a shift in the 21st century. This shift is caused by technological developments (Moorthy & Arulsamy, 2014; Rifin et al., 2019), resulting in fundamental changes in the educational paradigm (Sarkar, 2021). New paradigms such as student centered, provide major changes for students to build knowledge actively, focusing on the role of students rather than on stimuli received from the environment and educators collaborating with students through technology as an interaction tool (Jacobs & Farrell, 2001; Jonhson et al., 1998; Olfier, 2021). This paradigm shift requires changes in the learning process.

Innovative progresses have an impact on the instructing and learning handle and plan the millennial era to be talented at competing within the worldwide economy and creating the 4C skills, namely critical thinking, communication, collaboration, dan creativity (Calacar, 2020; Chiruguru, 2020; Joynes et al., 2019). The new curriculum implemented, such as the independent curriculum, is in accordance with these needs and answers challenges that are oriented towards 4C skills (Jufriadi et al., 2022). These skills help students achieve learning outcomes and gain the benefits of skills for the next level of education (Umamah et al., 2020). Therefore, learning practices are expected to be in accordance with the curriculum and integrate technology into it.

History learning in an independent curriculum is oriented towards natural thinking abilities which will encourage the formation of independent humans who have historical awareness (BSKAP, 2022). Thus, history learning has experienced changes driven by digital technology at every level of school (Kelly,



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2013; Umamah et al., 2022). So history educators have an important role in creating learning innovations through developing new learning experiences to use technology in classroom learning (Umamah et al., 2022). This shows the importance of innovative history learning in the 21st century.

Learning history teaches students to be able to find true facts about historical events through historical analysis skills (Kelly, 2013). Historical analysis is the most basic skill development and is one of the standards of historical thinking skills (Kelly, 2013; UCLA, 1996b). To be able to find historical facts, it is necessary to identify the source of the document and interpret the meaning of the source by reading carefully and requiring historical reasoning (Gestsdóttir et al., 2019; Reisman et al., 2019).

In fact, there are still low historical analysis skills and the practice of teaching methods applied by educators is still teacher centered and emphasizes reading, listening, memorizing and taking notes (Firmansyah et al., 2022; Ima et al., 2023; Safitri et al., 2019). Based on the results of previous research, the ability of historical analysis and the results of history learning show that the results are not optimal. Research conducted by Wanda et al., (2023) shows that the level of historical analysis ability in small groups was 64.66 and in large groups was 58.51 (Hamidah et al., 2023). Lelitya & Dian's research (2022) shows a low level of analytical skills at 83.3%. Then the results of previous research related to learning outcomes conducted by Safitri et al., (2019) showed low cognitive aspect results (Safitri et al., 2019). Research by Sin Wei Lim et al., (2023) shows the lack of enthusiasm of students in learning history due to changes in the curriculum (Lim et al., 2023). Research by Wa Ima et al., (2023) shows that students do not participate actively because some of their learning processes are controlled by educators and are still static and conventional (Ima et al., 2023). Overall, the results of the research above show that there is still a low level of historical analysis ability and student learning outcomes due to the fact that the history learning process tends to be boring. So solutions are needed to overcome problems in history learning.

Theoretical studies found several innovative learning models to improve historical analysis skills and student learning outcomes. One of them is the self-directed learning model. The technology-based self-directed learning model helps students find sources of information and contribute to collaborative learning (Geng et al., 2019). The self-directed learning model process and historical analysis skills encourage students to develop the ability to evaluate their own lack of knowledge by searching for relevant sources of information, interpreting and analyzing sources and building and criticizing narratives about the past (Dastjerdi & Ahmed, 2019; Waring & Robinson, 2010). The self-directed learning model emphasizes students being more active, having independence in learning, being motivated and having useful encouragement in order to achieve optimal learning outcomes (Rufaidah et al., 2021; Yoesya et al., 2019). Learning outcomes can be achieved if students understand the learning objectives, therefore educators are responsible for ensuring that students understand the objectives and assessment criteria that have been set (Rufaidah et al., 2020). The advantages of the self-directed learning model are that it has effective learning direction, increases motivation and independent learning skills, increases self-confidence and fosters learning experiences (Gibbons, 2002; Irgananda et al., 2018; Saha, 2006). By implementing self-directed learning, students can build learning experiences, create an active learning environment, and can evaluate learning progress independently (Bonk et al., 2015; Saha, 2006; Yusrianti et al., 2020).

In addition, the existence of technology supports the discovery learning model strategy by meeting the needs of independent learners, contextualizing and involving social aspects, providing new discoveries and can be maintained in the long term (Hai-Jew, 2008). Discovery learning is discovery-based learning that occurs in problem-solving situations (Umamah et al., 2019). Students can develop problem solving skills by accessing the use of technology to obtain information (Borthick & Jones, 2000). Thus, in this learning, students can build knowledge in the realm of learning to a higher level of thinking and require students to learn to find, solve problems and draw their own conclusions (Norbert M., 2012; Priyanti et al., 2015; Umamah et al., 2019). Developing historical thinking skills think gives openings for understudies to inquire true questions, utilize different sources, check the veracity of sources, be able to consider elective points of view, discover sources to reinforce and address their speculations and



construct their own narratives (Cowgill II & Waring, 2017). So historical analysis skills are needed to be able to differentiate historical events between primary sources (historical facts) and comments or reflections from secondary sources (Lozano & Segura, 2016). In history learning, the discovery learning model is able to encourage students to think analytically and be able to carry out problem solving independently, so that they can build concepts, concepts and ideas that are in accordance with the knowledge they have, thereby enabling increased learning outcomes (Susanti, 2015).

Innovation media-based learning such as self-directed learning and discovery learning models is the key to success in understanding with the requests of 21st education century which provides independent learning experiences (Castronova, 2002; Yusrianti et al., 2020). Independent learning using technology can make students more active, motivated in exploring and developing their potential to achieve maximum learning outcomes (Rufaidah et al., 2020). One of the technological media used is focusky. Focusky is an interactive learning media in multimedia form of multimedia that can be used by educators and students (Rini et al., 2022). By utilizing focusky media, understudies are spurred to carry out the learning process independently and improve their understanding of the material with an attractive appearance so that they are able to attract and interpret information correctly (Hernela & Syafril, 2020; Nuraeni et al., 2020). Rahmawati & Muliadi's research (2020) shows that the use of focusky media can optimize the learning process with effective new experiences (Rahmawati & Muliadi, 2020). Research by Ofianto et al., (2022) shows that focusky media has proven to be an important component in history learning media (Pratiwi & Ofianto, 2022). From the theoretical studies and previous research described above, this inquire about is of the see that it is vital to conduct inquire about on self-directed learning models and discovery learning models assisted by focusky media and their effectiveness in improving historical analysis skills and learning results in history subjects.

### Research Questions

1. Is there a significant difference in the students' historical analysis who are taught using the self-directed learning model assisted by focusky media versus the discovery learning model assisted by focusky media in history subjects?
2. Is there a significant difference in the students' learning outcomes who are taught using the self-directed learning model assisted by focusky media versus the discovery learning model assisted by focusky media in history subjects??
3. How is the effectiveness of the self-directed learning model and the discovery learning model assisted by Focusky media on the historical analysis and learning outcomes of students in history subjects?

## RESEARCH METHODOLOGY

### Research Design

This research used a quasi-experimental with a pretest-posttest, nonequivalent group design (Cohen et al., 2018). This is due to the impossibility of the conditions, schedule and full randomization of research subjects (Ary et al., 2010).

### Research Respondents

The population of this research is students class X of SMA Negeri 1 Bangorejo for the 2022/2023 academic year, totally 300 students. The research sample was 65 students based on a homogeneity test and the average value of daily tests in history subjects. After the population results are declared homogeneous, two classes are selected that have almost the same mean value. The two classes are class X4 and class X9. The class X4 treated with a self-directed learning model assisted by focusky media and the class X9 treated with a discovery learning model assisted by focusky media.



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## Research Instrument

The instrument used to measure students' historical analysis is a performance test in the form of a paper with indicators belonging to UCLA (1996) including: (1) Consider multiple perspectives; (2) Analyze cause-and-effect relationships bearing in mind multiple causation; (3) Draw comparisons across eras and regions in order to define enduring issues; and (4) Distinguish between unsupported expressions of opinion and informed hypotheses grounded in historical evidence (UCLA, 1996a). Meanwhile, the instrument used to measure learning outcomes is in the form of multiple choice questions with Bloom's cognitive analysis domain C4 level indicators including: (1) Differentiating; (2) Organizing; dan (3) Attributing (Anderson. et al., 2001).

## Instrument Trial Results

### a. Validity Test

The research used a multiple-choice learning outcomes test instrument. The multiple-choice question test instrument is tested for validity to ensure its credibility. Invalid multiple choice question test instruments will be discarded and not used, while valid multiple choice question tests are used for pretest and posttest. The validity test used the product moment correlation formula with SPSS 23 for Windows software. The decision-making criteria are as follows.

- A. Significance level 5% (0,05)
- B. If  $r_{\text{count}} > r_{\text{table}}$ , then the question item is said to be valid. On the other hand, if  $r_{\text{count}} < r_{\text{table}}$ , then the question item is said to be invalid.
- C. If the significance value is  $< 0,05$ , then the item is considered valid. Conversely, if the significance value is  $> 0,05$ , then the item is considered invalid.

The validity results of the multiple-choice test with 30 questions at level C4 (analysis) show the value of  $r_{\text{count}} > r_{\text{table}}$ . Then, at a significance level of 5%, the overall item shows  $< 0,05$ . So, it can be concluded that from the results of the decision criteria in the validity test the multiple-choice questions were declared valid and suitable for use in research.

### b. Reliability Test

Reliability testing is used to determine the reliability of multiple-choice test items using Cronbach's Alpha calculations using the SPSS version 23 for Windows software program. The reliability coefficient categories refer to Guilford (1956) as follows.

- A.  $0,80 < r_{11} \leq 1,00$  very high reliability
- B.  $0,60 < r_{11} \leq 0,80$  high reliability
- C.  $0,40 < r_{11} \leq 0,60$  moderate reliability
- D.  $0,20 < r_{11} \leq 0,40$  low reliability
- E.  $-1,00 < r_{11} \leq 0,20$  very low reliability

The results of the reliability test on the multiple-choice questions test are presented in the table below.

**Table 2.** The Results of The Research Instrument Reliability Test

Research variable	N	Coefficient Alpha Cronbach	Notes
Learning outcomes	33	0,938	very high reliability

Based on the reliability test results, the multiple-choice question test instrument was 0,938 in the  $0,80 < r_{11} \leq 1,00$  category (very high reliability). Based on the data that has been obtained, it can be concluded that the multiple-choice question test instrument is very reliable and shows good consistency.



## Analysis Prerequisite Test

Analysis prerequisite tests include homogeneity tests and normality tests. Before carrying out hypothesis testing, a homogeneity test and normality test are carried out as prerequisite tests for analysis. Researchers used the t-test (Independent Sample T-test) to determine differences in the level of historical analysis ability and learning outcomes of students in history subjects before and after implementing the self-directed learning model and the discovery learning model assisted by focusky media.

### a. Homogeneity Test

The homogeneity test aims to ensure that the data from each of the two class samples has the same variance based on the results of daily tests. The homogeneity test in this study used the Homogeneity of Variance Test analysis with Levene statistics using SPSS 23 for Windows software. The decision-making criteria in this research use a significance level of 5%, so that:

- A. If the sig value is  $> 0.05$  then the data distribution is called homogeneous
- B. If the sig value is  $< 0.05$  then the data distribution is called heterogeneous

The results of the homogeneity test of daily test scores for class X4 and class X9 are presented in the table below.

**Table 3.** Homogeneity Test Results of Daily Test Scores for Class X4 and Class X9

Data	Levene Statistic	df1	df2	Sig.	Notes
Daily Test	0,312	1	63	0,578	Homogeneous

Based on the table of Levene statistical homogeneity test results on daily test scores for class X4 and class X9 were obtained value 0,578 ( $0,578 > 0.05$ ) which means that the daily test scores for the class show homogeneous results.

### b. Normality Test

The normality test can be measured from the pretest and posttest results of learning outcomes from two samples. Class X4 is used as experimental class 1 which is taught using the self-directed learning model assisted by focusky media, while Class X9 is used as experimental class 2 which is taught using the discovery learning model assisted by focusky media. The purpose of the normality test is to find out whether the data distribution is normally distributed or not. The normality test uses SPSS 23 for Windows software with the Kolmogorov-Smirnov test with decision making criteria using a significance of 5%.

- A. If the sig value is  $> 0,05$  then the distribution is normal
- B. If the sig value is  $< 0,05$  then it is not normally distributed.

The following table is the results of normality tests on historical analysis abilities and learning outcomes.

**Table 4.** Normality Test Results for Students' Historical Analysis of Class X4 and Class X9

Sample	Data	N	Sig.	Notes
experiment 1	Pretest historical analysis	32	0,110	Normally distributed
	Posttest historical analysis	32	0,164	Normally distributed
experiment 2	Pretest historical analysis	33	0,073	Normally distributed
	Posttest historical analysis	33	0,178	Normally distributed



**Table 5.** Normality Test Results for Students' Learning Outcomes Class X4 and Class X9

Sample	Data	N	Sig.	Notes
experiment 1	Pretest learning outcomes	32	0,072	Normally distributed
	Posttest learning outcomes	32	0,058	Normally distributed
experiment 2	Pretest learning outcomes	33	0,177	Normally distributed
	Posttest learning outcomes	33	0,076	Normally distributed

Based on the normality test results in table 4 and table 5, historical analysis abilities and learning outcomes in experimental class 1 and experimental class 2 show a pretest and posttest significance value greater than 0.05. Thus, the data in experimental class 1 and experimental class 2 are normally distributed.

### Hypothesis Testing

This research uses the t-test (independent sample T-test) in hypothesis testing. Several things that must be considered in the t-test results are the need to pay attention to the variance of the variables. The variance in the Levene's Test for Equality of Variance column shows homogeneity results. It is said to be homogeneous if the Sig (p) value is  $> 0.05$ , while it is said to be inhomogeneous if the Sig (p) value is  $< 0.05$ .

The decision-making criteria in hypothesis testing are as follows.

- A. The magnitude of the difference between the means of the two groups is shown in the Mean Difference column.
- B. Decision making uses  $t_{\text{count}}$  calculations with  $t_{\text{table}}$ 
  - 1) If the  $t_{\text{count}}$  value is positive, then there is a significant difference if  $t_{\text{count}} > t_{\text{table}}$  and vice versa.
  - 2) If the  $t_{\text{count}}$  value is negative, then there is a significant difference if  $t_{\text{count}} < t_{\text{table}}$  and vice versa.
- C. Decision making uses sig values. (2-tailed)
  - 1) If sig. (2-tailed) significance value  $> 0,05$ , then  $H_0$  is accepted, and  $H_a$  is rejected.
  - 2) If sig. (2-tailed) significance value  $< 0,05$ , then  $H_0$  is rejected, and  $H_a$  is accepted

The results of the pretest scores on historical analysis skills and learning outcomes will be used to determine any initial differences between the two samples before being given treatment from the two models for experimental class 1 and experimental class 2 respectively.

The following are the results of the pretest t-test of historical analysis abilities in experimental class 1 and experimental class 2.

**Table 6.** Pretest T-Test Results for Historical Analysis

Research Variable	Class	N	Mean	Mean Difference
Pretest Historical Analysis	Experiment 1	32	75,75	6,750
	Experiment 2	33	69,00	

The pretest score for historical analysis ability in experimental class 1 obtained an average value of 75.75 and the pretest score for historical analysis ability in experimental class 2 was 69.00 with a mean difference between the two samples (mean difference) of 6.750. This shows that before being given treatment according to each learning model, the average value of learning outcomes in experimental class 1 was better than in experimental class 2.

The following are the results of the pretest t-test of learning outcomes in experimental class 1 and experimental class 2.



**Table 7.** Pretest T-Test Results of Learning Outcomes

Research Variable	Class	N	Mean	Mean Difference
Pretest Learning Outcomes	experiment 1	32	72,09	5,639
	experiment 2	33	66,45	

The pretest score for learning outcomes in experimental class 1 obtained an average value of 72.09 and the pretest score for experimental class 2 learning outcomes was 66.45 with a mean difference between the two samples (mean difference) of 5,639. This shows that before being given treatment according to each learning model, the average value of learning outcomes in experimental class 1 was better than in experimental class 2.

Hypothesis testing in this research can be seen in the posttest results on the independent sample t-test output.

1. Significant differences in historical analysis abilities between students taught using the self-directed learning model assisted by focusky media and students taught using the discovery learning model assisted by focusky media.
  - a)  $H_0$ : There is no significant difference in historical analysis abilities between students taught using the self-directed learning model assisted by focusky media and students taught using the discovery learning model assisted by focusky media.
  - b)  $H_a$ : There is a significant difference in historical analysis abilities between students who are taught using the self-directed learning model assisted by focusky media and students who are taught using the discovery learning model assisted by focusky media.

The following are the results of the t-test on students' historical analysis abilities after being given treatment in experimental class 1 and experimental class 2.

**Table 8.** Posttest T-Test Results for Historical Analysis Skills

Data	Variant	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference
Posttest Historical Analysis	Equal variances assumed	0,002	0,946	2.029	63	0,047	2.733

The determination of the t-test is seen in the Equal variances assumed column based on the homogeneity test in the significance column (Sig.). The F value in the historical analysis posttest is 0.002 with sig. equal to 0.946 is greater than ( $>$ ) 0.05 so it is declared homogeneous. The first decision making criterion is taken based on the  $t_{table}$  value and  $t_{count}$  value. Based on  $t_{table}$  data with df 63 at a significance level of 5% or 0.05, the figure is 1.9983. Meanwhile the  $t_{count}$  value is positive 2.029. The  $t_{count}$  number  $2.029 > 1.9983$ . Next, the second decision making criterion is based on the Sig value. (2 tailed) namely  $0.047 < 0.05$  smaller than the significance level of 0.05 so that  $H_0$  is rejected, and  $H_a$  is accepted. Meanwhile, the magnitude of the difference in the average historical analysis ability of students obtained from experimental class 1 which was taught using the self-directed learning model assisted by focusky media and experimental class 2 which was taught using the discovery learning model assisted by focusky media can be seen in the mean difference column of 2.733 which shows that there is significant differences in students' historical analysis abilities.

2. Significant differences in learning outcomes between students taught using the self-directed learning model assisted by focusky media and students taught using the discovery learning model assisted by focusky media.

The results of the t-test on student learning outcomes after treatment in experimental class 1 and experimental class 2.



**Table 9.** Posttest T-Test Results of Learning Outcomes

Data	Variant	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference
Posttest Learning Outcomes	Equal variances assumed	0,007	0,934	2.143	63	0,036	3,059

The determination of the t-test is seen in the Equal variances assumed column based on the homogeneity test in the significance column (Sig.). The F value on the posttest on learning outcomes is 0.007 with sig. equal to 0.934 is greater than (>) 0.05 so it is declared homogeneous. The first decision making criterion is taken based on the  $t_{table}$  value and  $t_{count}$  value. Based on  $t_{table}$  data with df 63 at a significance level of 5% or 0.05, the figure is 1.9983. Meanwhile the  $t_{count}$  value is positive 2.143. The  $t_{count}$  number is  $2.143 > 1.9983$ . Next, the second decision making criterion is based on the Sig value. (2 tailed) namely  $0.036 < 0.05$  smaller than the significance level of 0.05 so that  $H_0$  is rejected, and  $H_a$  is accepted. Meanwhile, the magnitude of the difference in the average learning outcomes of students obtained from experimental class 1 which was taught using the self-directed learning model assisted by focusky media and experimental class 2 which was taught using the discovery learning model assisted by focusky media can be seen in the mean difference column of 3.059 which shows that there is a difference which is significant in student learning outcomes.

### Effectiveness Test Results

After carrying out homogeneity tests, normality tests and hypothesis tests, an effectiveness test was then carried out to see the effectiveness of the self-directed learning model assisted by Focusky media on historical analysis skills and student learning outcomes in history subjects. The effectiveness test is calculated using Effect Size based on the mean and standard deviation output from descriptive statistics independent sample t-test.

**Table 10.** Posttest T-Test Results for Historical Analysis Skills

Research Variable	Class	N	Mean	Std. Deviation
Posttest Historical Analysis	experiment 1	32	83,19	5,355
	experiment 2	33	80,45	5,501

Experimental class 1 on the results of the historical analysis ability posttest obtained an average score of 83.19 with a standard deviation of 5.355 while experimental class 2 obtained an average score of 80.45 with a standard deviation of 5.501. Then to calculate the effect size, use Hedges' formula as follows.

$$g = \frac{M_1 - M_2}{\sqrt{\frac{(n_A - 1)SD_A^2 + (n_B - 1)SD_B^2}{n_A + n_B - 2}}}$$

$$g = \frac{83,19 - 80,45}{\sqrt{\frac{(32 - 1)5,355^2 + (33 - 1)5,501^2}{32 + 33 - 2}}}$$

$$g = 0,050$$

Referring to Hedges' criteria, the effect size results above show 0.050, which means that the self-directed learning model assisted by focusky media on historical analysis skills is included in the medium category.



**Table 11.** Posttest T-Test Results of Learning Outcomes

Research Variable	Class	N	Mean	Std. Deviation
Posttest Learning Outcomes	experiment 1	32	79,94	5,842
	experiment 2	33	76,88	5,667

Experimental class 1 on posttest learning results obtained an average score of 79.94 with a standard deviation of 5.842 while experimental class 2 obtained an average score of 76.88 with a standard deviation of 5.667. Then to calculate the effect size, use Hedges' formula as follows.

$$g = \frac{M_1 - M_2}{\sqrt{\frac{(n_A - 1)SD_A^2 + (n_B - 1)SD_B^2}{n_A + n_B - 2}}}$$

$$g = \frac{79,94 - 76,88}{\sqrt{\frac{(32 - 1)5,842^2 + (33 - 1)5,667^2}{32 + 33 - 2}}}$$

$$g = 0,053$$

Referring to Hedges' criteria, the effect size results above show 0.053, which means that the self-directed learning model assisted by focusky media on learning outcomes in history subjects is included in the medium category.

### Data Analysis

Data analysis used the independent sample t-test with SPSS 23 for Windows software. Analysis prerequisite tests in the form of homogeneity tests and normality tests. Then, to measure the effectiveness, it is calculated using Hedges' effect size (Ellis, 2010) based on the mean and standard deviation output from descriptive statistics independent sample t-test.

$$g = \frac{M_1 - M_2}{SD_{pooled}^*}$$

The effect size is determined by Sawilowsky (2009) classification as follows.

**Table 1.** Effect Size Criteria

Effect Size (g)	Notes
0,01	Very small
0,2	Small
0,5	Medium
0,8	Large
1,2	Very large
2,0	Huge

## RESULTS AND DISCUSSION

### The Differences of student's Historical Analysis Between the Self-Directed Learning Model Assisted by Focusky Media versus the Discovery Learning Model Assisted by Focusky Media

The results of the posttest t-test for historical analysis abilities are based on the Sig value. (2 tailed) namely  $0.047 < 0.05$  smaller than the significance level of 0.05 so that  $H_0$  is rejected, and  $H_a$  is accepted. This implies that there is a significant difference in historical analysis abilities between students who are educated using the self-directed learning model assisted by focusky media and students who are educated using the discovery learning model assisted by focusky media.



Based on these results, the historical analysis ability score for experimental class 1 is better than experimental class 2. This is because there is an increase in the average value of historical analysis skills. So that students can learn independently, increase their understanding of history to carry out historical analysis and be able to evaluate the learning activities that have been carried out (Cengiz, 2015; Silen & Uhlin, 2008). These results can be seen in the average pretest and posttest historical analysis data. In the pretest the average value was 75.75 while in the posttest the average value was 83.19. Thus, the achievement of students' historical analysis abilities is achieved well by using the self-directed learning model assisted by focusky media.

The self-directed learning model can improve historical analysis ability activities by involving students to answer questions, search for and evaluate historical sources and interpret them with their own understanding (UCLA, 1996a). This is implemented in syntax two, namely monitoring, and syntax three, namely evaluating. The self-directed learning model assisted by Focusky media is a suitable facility for independent learning. Ellinger (2004) said that independent learning requires students to have responsibility in planning, implementing, and evaluating their own learning experiences.

This research strengthens theoretical studies that with independent learning students become motivated and active in developing critical skills to provide meaning to historical sources and events (Fellows et al., 2000; Lozano & Segura, 2016; Seixas, 2015). Independent learners are able to transfer learning in terms of knowledge and skills (Kapur, 2019). Competency skills required by students as independent learners (Mansoor & Bagherzadeh, 2014) namely assessment of learning gaps, evaluation of self and others, reflection, information management, critical thinking and critical assessment. These six skills are interrelated, so that students together can use and direct themselves in controlling their learning experience by making the best use of their time in independent learning (Loeng, 2020; Mansoor & Bagherzadeh, 2014; Saha, 2006).

This research strengthens previous research by Khodabandehlou et al., (2012) which shows that the self-directed learning model can improve understanding in reading narrative texts (Khodabandehlou et al., 2012). Research by Sembiring et al., (2023) shows that the application of the self-directed learning model makes students enthusiastic, more active and participate in learning (Sembiring et al., 2023).

The existence of digital technology in independent learning requires students to have developed soft skills such as self-directed learning (Rini et al., 2022). For students who are independent enough in learning and sufficient to understand a concept, the self-directed learning model can help them analyze the steps needed to produce a change (Hawkins, 2018).

### **The Differences of Student's Learning Outcomes Between Self-Directed Learning Model Assisted by Focusky Media Versus the Discovery Learning Model Assisted by Focusky Media**

In the results of the posttest t-test, learning outcomes are based on the Sig value. (2 tailed) namely  $0.036 < 0.05$  smaller than the significance level of 0.05 so that  $H_0$  is rejected, and  $H_a$  is accepted. This implies that there is a significant difference in learning outcomes between students who are educated using the self-directed learning model assisted by focusky media and students who are educated using the discovery learning model assisted by focusky media.

Based on these results, the learning outcomes of experimental class 1 are better than experimental class 2. This is because there is an increase in the average value which is an implication of the self-directed learning model assisted by focusky media which has been carried out based on the syntax of the self-directed learning model, namely planning, monitoring and evaluating (Song & Hill, 2007). These results can be seen in the average pretest and posttest learning outcomes data. In the pretest the average value was 72.09, while in the posttest the average value was 79.94. Thus, students' learning outcomes are achieved well by using the self-directed learning model assisted by focusky media.

The use of the self-directed learning model has a good impact on learning outcomes using focusky media (Maphalala et al., 2021; Rufaidah et al., 2020), this is due to several factors including the following. First, the self-directed learning model is process where students take their own initiative to diagnose learning needs, define learning goals, identify resources learning and apply appropriate



learning strategies and evaluate learning results (Geng et al., 2019; Towle & Cottrell, 1996). Second, the learning process of the self-directed learning model is student-centered, and students are divided into small groups to discuss the tasks given. At this stage, students obtain more meaningful learning activities because they encounter many problems and challenges in them (Song & Hill, 2007). Third, with the self-directed learning model, students become motivated, have responsibility, collaborative control of cognitive processes and self-management to produce meaningful and valuable learning outcomes (Garrison, 1997). In this way, students can monitor and evaluate their independent learning progress (Mansoor & Bagherzadeh, 2014).

This research strengthens previous research by Nainggolan & Manalu, (2022) showing that the self-directed learning model can improve learning outcomes and students get the benefits of learning by using the self-directed learning model (Nainggolan & Manalu, 2022). In this way, students can evaluate learning progress and take responsibility for independent learning and are motivated to develop their potential to achieve optimal learning outcomes (Bonk et al., 2015; Rufaidah et al., 2020). The self-directed learning model assisted by focusky media creates independent learning that is flexible and can be adapted to the learning needs of each student and can add to a meaningful learning experience.

### **The Effectiveness of the Self-Directed Learning Model Assisted by Focusky Media on Historical Analysis Abilities and Learning Outcomes of Students in History Subjects**

The effectiveness test criteria referring to (Sawilowsky, 2009) show an effect size of 0.050 in the medium category. So, the self-directed learning model assisted by focusky media on historical analysis skills is able to provide abstract material in a simple way so that students can understand the concept of historical subject matter. Then the results of the effectiveness test on history subject learning outcomes show an effect size of 0.053 in the medium category.

The self-directed learning model assisted by Focusky media is quite effective in improving students' historical analysis skills and learning outcomes, because this is caused by several factors, including first, Focusky media is supported by features such as text, sound, video, images and animation so that it can reach all students' learning styles and provide opportunities for them to measure their individual learning speed (Hernela & Syafril, 2020). Second, students are given the opportunity to explore independent learning resources that have been provided in focusky media. An independent learner is able to transfer learning in terms of skills to critically identify information obtained through the process of selecting, compiling and utilizing it appropriately for learning needs (Kapur, 2019; Noviyanti et al., 2022). Third, the role of educators in the self-directed learning model is to direct the development of self-directed learning abilities that are adapted to the level of students' abilities (Tjakradidjaja A et al., 2016). So it can be said that students cannot be separated from the help of educators in the learning process in this model.

This research strengthens previous research by Putri & Aznam, (2019) that there is effectiveness of focusky media on students' HOTS abilities (Putri & Aznam, 2019). Research by Pratiwi & Ofianto, (2022) shows that focusky media can improve students' chronological thinking abilities (Ofianto et al., 2022). Research by Apriliantika et al., (2021) shows that the use of focusky media has proven to be effective in the medium category and can improve learning outcomes (Apriliantika et al., 2021). Research by Novitasari et al., (2018) shows that the use of focusky media makes students actively involved in learning and is proven to be effective in the medium category on learning outcomes (Novitasari et al., 2018). This interactive relationship in learning makes students aware and empowers that learning is an individual responsibility (Rufaidah et al., 2020). Thus, the use of focusky media in the self-directed learning model has proven to be effective and can support an innovative independent learning process and encourage students to become more active, motivated, and able to explore knowledge independently so as to produce optimal learning outcomes.



## CONCLUSION

The results of research on the results of the t-test (Independent Sample T-test) on the posttest of historical analysis ability show that the average difference obtained is 2.733. Then in the posttest the learning results showed that the average difference obtained was 3.059. Based on the difference in average size, it can be concluded that the historical analysis abilities and learning outcomes of class students in experimental class 1 are better than experimental class 2.

The effectiveness of the self-directed learning model assisted by focusky media on historical analysis abilities and learning outcomes in history subjects is caused by several factors, namely students' motivation and responsibility in taking their own initiative, setting goals, identifying learning sources, choosing learning strategies and evaluating learning outcomes. Apart from that, another factor is that the role of educators in this model is to direct the development of self-directed learning abilities that are adjusted to the level of students' abilities.

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