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Article

Application of Discovery Learning Method to Improve Students' Critical, Tactical, and Innovative Thinking Patterns

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A B S T R A C T

This research aims to describe how the learning process at Widya Dharma Klatten University is based on the discovery learning method. In connection with this statement, this research focuses on 1) Can the application of discovery learning method improve the learning achievement of students/citizen learners at Widya Dharma University Klaten? 2) Can the application of discovery learning method improve the critical, tactical, and innovative thinking patterns of students/citizen learners at Widya Dharma Klaten University? The type of research used is class action research. Classroom action research is an observation of learning activities in the form of actions, which are deliberately raised and occur in the classroom together. As primary data are students, lecturers, The secondary data are documents of Indonesian Language and Literature Education students in the form of score lists, student rosters, and other records that support this research. The data collection techniques used were tests, observations, interviews, and documentation. The analysis technique used is by using descriptive qualitative which includes three streams of activities simultaneously and continuously during and after data collection, namely data reduction, presentation, and conclusion drawing/verification. The results showed that of the nine students examined, all students experienced a 100% increase. However, of the one hundred percent of students there is one who can be said to have not passed (successfully). However, the student's score continued to rise. The conclusion is 88.888% passed, and 11, 111% did not pass (although the gradation increased).

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INTRODUCTION

The main competency that must be possessed by the young generation (read: citizen learners) is to always strive and be able to take part in real life in the 21st century. According to the Ministry of Education and Culture (2017: 5), the 21st century competencies that must be possessed by citizen learners are having various skills, namely: a) creativity and innovation, b) critical thinking and problem solving, c) communication, and collaboration. These four concepts of thinking are known as the 4 Cs.

This statement triggers and spurs researchers to invite, train, and force students to think critically, find their own way, practice to bring up their personal creations to solve the linguistic problems they face. This creativity will make an example for other students to imitate. By inviting students to find solutions, this is the main target of discovery learning in this study. The above statement is in line with Law No. 20 of 2003, article 3 on the National Education System which states that education functions to develop abilities and form character, as well as a dignified national civilization in order to educate the nation's life, aims to develop the potential of students to become human beings who are faithful and devoted

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to God Almighty, noble, healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens. However, in reality, the learners (including students) still do not use their creativity in thinking to solve their problems. They are still lazy (still rarely use their creativity, less critical, rarely communicate actively among themselves, and even rarely use the concept of cooperation (collaboration).

These events often occur during learning. From the results of observations of the learning process carried out, researchers collected data from student activities, students, as well as teacher and lecturer activities. From the activities of teachers or lecturers, they still deliver material through interactive dialog (or face-to-face). The explanation technique is not carried out with activities that make students or students to find their own concepts (discovery). This will have an impact on students' understanding of the concept being weak because students or students do not play a direct role in the discovery of the concept. From student activities, they are less enthusiastic in participating in learning. They are less active and less motivated when learning takes place. On the other hand, they still seem shy in asking questions, lack of familiarity, fear of being wrong, and the habit of thinking critically, strategically, tactically, and finding their own practical formulas or ways to answer the problems they face is still indecisive (compare: Rizal: 2023; Fikriansyah 2023: Dewi and Discha, 2023).

To overcome the above problems, there are several alternative solutions that can be used. For learning methods, the experimental method can be used. Hayuningtyas, et al, 2017 (compare: Surahman, et al, 2020; Susanto, 2013; Suwartono; 2014) stated that the experimental method provides opportunities for students to conduct their own experiments about a process. So, with this method students can directly interact with the material and conduct an experiment. Thus, the inquiry process can be realized. The second alternative method that can be used is constructivism. Constructivism means that students construct or build their own knowledge, not just taking knowledge for granted (Budiyono, et al: 2029; 2021; Astuti, 2022). Thus constructivism can be used to restore the inquiry process in learning. The next alternative is inquiry/discovery learning.

According to Sagala (2014: 196), inquiry/discovery is a teaching approach that seeks to lay the foundation and develop scientific thinking. This approach puts students or students more on their own learning, developing creativity in solving problems. So, in inquiry or discovery they really become the subject of learning, teachers / lecturers / lecturers only act as facilitators (compare: Kuswati, 2015; Mahardika; Padmono, 2012; Cooper, et all: 2006).

Based on the explanation of the theory and reality in the field, the researcher made the research title Application of Discovery Learning Method to Improve Critical, Tactical, and Innovative Thinking Patterns. Starting from the background of the problem mentioned above, the problems in this study are 1) to describe whether the application of the discovery learning method can improve the learning achievement of students/citizen learners at Widya Dharma University Klaten; 2) whether the application of the discovery learning method can have an impact on the concept of critical, tactical, and innovative thinking of students/citizen learners at Widya Dharma University Klaten?

METHOD

The type of research used is class action research. Classroom action research is an observation of learning activities in the form of action. Classroom action research is an observation of learning activities in the form of actions, which are deliberately raised and occur in the classroom together. As primary data are students, lecturers, and researchers themselves, while secondary data are documents of Indonesian Language and Literature Education students in the form of a list of grades, a list of student names, and other notes that support this research. The data collection techniques used were tests, observations, interviews, and documentation.

The analysis technique used is by using descriptive qualitative which includes three streams of activities that are simultaneously and continuously during and after data

collection, namely data reduction, presentation, and conclusion drawing / verification. Triangulation is a technique of checking the truth of data by researchers obtained from comparing or collecting data from various data collection techniques and existing data sources. The use of triangulation in this study is to measure the validity of qualitative data that must be processed into numbers or percentages so that there is an increase or decrease in the results in the study.

The research model used in this study is a collaborative classroom action research model between lecturers as practitioners/implementers and researchers. Suwartono (2024: states that the research procedure includes the following stages: (a) preparing an action plan, (b) implementing the action, (c) observation, and (d) reflection, and so on until the expected improvement or increase is achieved.

The following is the flow of classroom action research conducted by researchers.
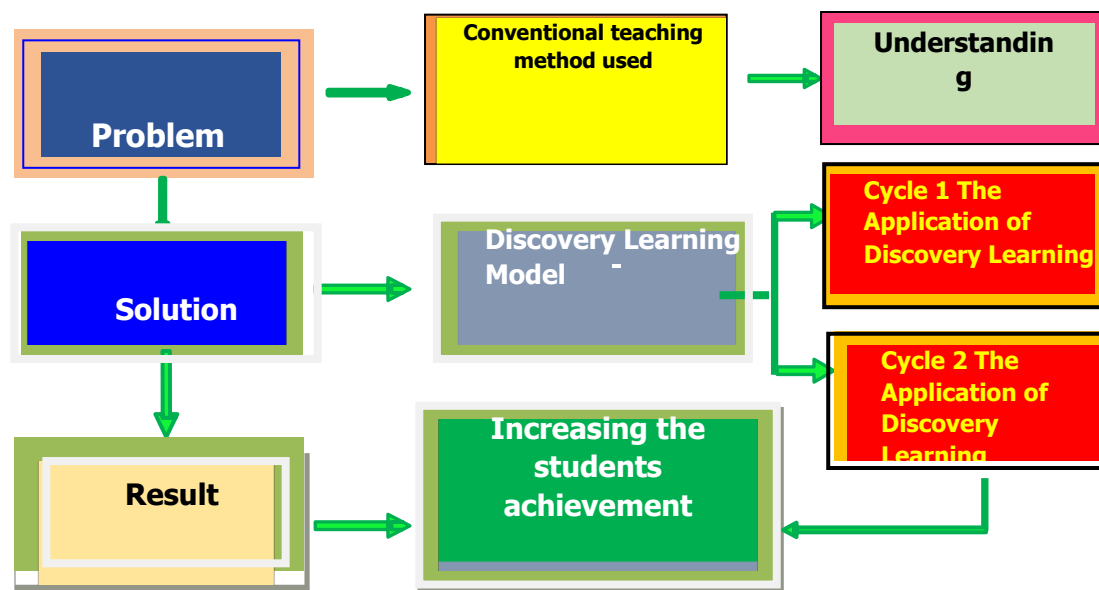

Figure 1: Flow Chart of Classroom Action Research

FINDINGS AND DISCUSSION

Description of Learning Improvement in Pre-Cycle

The data that draws the initial conditions in this study are data obtained from observations made in the learning process for second semester students, Indonesian Language and Literature Education Study Program, Widya Dharma University Klaten, Central Java, Indonesia. At this stage the researcher observed and went directly to provide test services. The test given to the students was carried out naturally, in the sense that there was no engineering and special treatment, such as explaining in advance what discovery learning means, its essence, function, purpose, and so on. From this, the temporary results of the students' scores will be known before the research is carried out.

The following is a learning improvement study taken from the results of the score before improvement. This event is made with the intention of knowing the results of research before being treated with learning improvements. The description of the research results before learning improvement is as follows below (see table 1). In the picture in table 1 below is a picture of the learning process when an evaluation test is carried out without any treatment. The results clearly show that the scores obtained are still far below perfect.

Application of Discovery Learning Method to Improve Students' Critical, Tactical, and Innovative Thinking Patterns

Table 1. Value Data Before Learning Improvement for Indonesian Language and Literature EducationStudents in Semester II

No	Name	Score	Description
1	CSI	4,5	Failed
2	ES	4,25	Failed
3	RA	4,0	Failed
4	TF	4,5	Failed
5	PFNZ	5,5	Failed
6	TW	3,75	Failed
7	PR	4,5	Failed
8	RJW	4,25	Failed
9	ADP	4,0	Failed
	Total	39,25	
	Average	4,36111	

Description: L = Pass (Score 5.6 - 10)

TL = Not Pass (Score less than 5.6)

From the data above, it can be seen that out of 9 students, none of them passed or got a score above 5.6. The impact if taken on average, then each student gets a score of 4.36111. So, on average it is still far from the graduation rate. The data above when classified as follows. Classification A is the group of students who scored 8 - 10 (zero). Classification B is the group of students who got a score of 7 - 7.9 which is also zero, none of the students got a good score. Classification C is a group of students who got a score of 6 - 6.9 equivalent to a C (sufficient). The result was also zero, meaning that none of the students got a C (sufficient/adequate).

Classification D is the group of students who scored less than 5.6. From the data, it shows that none of the students in the learning improvement in the pre-cycle stage passed. In other words, all of them failed or got scores that were far from what was expected. When viewed in terms of percentages, the results of the activities of learning improvement efforts before needed by using the discovery learning method can be seen in the following table 2 below.

Table 2: Recapitulation of Grade Grouping and Percentage of Pre-Phasic Grades of Indonesian Language and Literature Education Students in Semester II

No	Classification	Number Students	Percentage	Description
1	A	-	-	-
2	B	-	-	-
3	C	-	-	-
4	D	9	100%	Failed
	Total	9	100%	

Description:

Pass (L) for score group 5.6 -10

Not pass (TL) for score group less than 5.6

Based on the data above, it means that it is necessary to make efforts to improve learning for students majoring in Indonesian Language and Literature Education at Widya Dharma University Klaten. The steps to improve learning are learning treatment in cycle 1 activities.

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In cycle 1 this was done with the aim of improving the learning process which was still not optimal.

Description of Learning Improvement in Cycle I

The following is a learning improvement study taken from the score results after improvement at the Cycle I stage. This event was made with the intention of knowing the results of research after being treated with learning improvements. The description of the research results of Cycle I can be observed through the following explanation below (see table 2).

Table 3. Data on the Value of Cycle I Learning Improvement for Indonesian Language and LiteratureEducation Students in Semester II

No	Name	Score	Description
1	CSI	5,5	Failed
2	ES	5,25	Failed
3	RA	5,0	Failed
4	TF	5,5	Failed
5	PFNZ	6,0	Failed
6	TW	4,75	Failed
7	PR	5,75	Failed
8	RJW	5,25	Failed
9	ADP	5,0	Failed
	Total		
	Average		

Description:
L = Pass (Score 5.6 - 10)
TL = Not Pass (Score less than 5.6)

Based on the data above, it can be clearly seen that out of 9 students there are only two students who passed. The two students are Putri Farazita Nur Azizah with a score of 6.0 and the other is Puji Rahayu with a score of 5.75. The results of this assessment are still not perfect because the learning process that takes place is still not optimal, in the sense that the explanation of the discovery learning method is only an explanation (no practice).

The impact if taken on average, then each student gets a score of 5.3333. So, on average it is still far from the passing rate. The data above is classified as follows.

Classification A is a group of students who got a score of 8 - 10 (zero);

Classification B is a group of students who got a score of 7 - 7.9 which is also still zero, none of thestudents got a good score;

Classification C is a group of students who got a score of 6 - 6.9 equivalent to a grade C or (just enough to pass). The results show that there is only one student who got a score of 6.0 (sufficient), namely Putri Farazita Nur Azizah; The moderate category, in the sense of just passing, there is only one student, Puji Rahayu, with a score of 5.75 (above 5.6); The last classification is a score below 5.6 or not passing. From the data exposed there are seven students who have not passed in this Cycle I stage. They are Christina Santika Indah, Eka Septianingtyas, Rizki Ayu Kuncoro Mukti, Tria Febrianti, Tri Wiratmi, Rizki Jati Wahyudi, and finally a student named Ardian Dwi Permono.

Based on the existing data, the above shows that there are only two students in the improvement of learning in the Cycle I stage. Judging from the percentage of activity results

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of learning improvement efforts in Cycle I using the discovery learning method can be seen in table 3 below.

Table 4. Recapitulation of Grade Grouping and Percentage of Grades in Cycle I of Second Semester Indonesian Language and Literature Education Students

No	Classification	Number Students	Percentage	Description
1	A	-	-	-
2	B	-	-	-
3	C	2	22,222%	-
4	D	7	77,777%	Failed
	Total	9	100%	

Description:
Pass (L) for the score group 5.6 -10, Not pass (TL) for the score group less than 5.6
Starting from the data above means that researchers still need to make efforts to improve learning for second semester students of the Indonesian Language and Literature Education Study Program, Widya Dharma University Klaten. The learning improvement steps are the learning treatment in Cycle 2 activities.

Description of Learning Improvement in Cycle II

Next is to conduct learning improvement research taken from the score results after improvement at the Cycle I stage. This event was made with the same intention as the activities carried out at the Cycle I stage, namely to find out the results of the research after the next learning improvement treatment. The description of the research results in Cycle II can be observed through the presentation of table 3 below. Judging from the development of each cycle, it turns out that the picture of increase is always there. This can be seen in the development of the increase in dilai achieved by the students of Indonesian Language and Literature Education Semester II. Indeed, a significant increase does not seem to be seen clearly and definitively. However, at least this developmental behavior is a place to reflect and do more research for the next researchers. The following is a description of the results of learning improvements in Cycle II.

Table 5. Data on the Value of Learning Improvement Cycle II in Indonesian Language and Literature Education Students Semester II

No	Name	Score	Description
1	CSI	6,5	Success
2	ES	6,5	Success
3	RA	6,0	Success
4	TF	5,75	Success
5	PFNZ	6,5	Success
6	TW	6,0	Success
7	PR	5,75	Success
8	RJW	6,5	Success
9	ADP	5,25	Failed
	Total	54,75	
	Average	6,083	

Notes: L = Pass (Score 5.6 - 10)
TL = Not Pass (Score less than 5.6)

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The data above shows that of the 9 students almost all passed except for Ardian Dwi Permono, with a score of 5.25. However, if you look carefully, even though his score was bad, he still got an increase in grades, both from Pre-Cycle, Cycle I, and Cycle II. The impact if taken on average, then each student gets a score of 6.083 So, on average, it can be said that almost all of them passed.... The data above when classified as follows.

Classification A is the group of students who scored 8 - 10 (zero);

Classification B is the group of students who scored 7 - 7.9 which is also still zero, none of the students got a good score;

Classification C is the group of students who scored 6 - 6.9 equivalent to a grade C (sufficient). The results showed that only five students scored 6.0 (fair) and above, namely: Christina Santika Indah with 6.5; Eka Septianingtyas with 6.5; Rizki Ayu Kuncoro Mukti with 6.0; Tria Febrianti with 5.75; Putri Farazita Nur Azizah with 6.5; Tri Wiratmi with 6.0; Puji Rahayu with 5.75; plus the last one who got a score above 5.75 was Rizki Jati Wahyudi with a score of 6.5; the last classification is a score below 5.6 or did not pass there is one student is Ardian Dwi Permono with a score of 5.25. Although he got a grade with a category of not passing, but the achievement of the grades achieved always increased, namely from 4.0, then 5.0, and the last one was 5.25.

From the available data, it shows that in the improvement of learning in the Cycle II stage there was only one student who passed. While the others passed. Judging from the percentage of activity results of learning improvement efforts in Cycle II using the discovery learning method can be seen in table 4 below.

Table 4: Recapitulation of Grade Grouping and Percentage of Grades in Cycle II Indonesian Language and Literature Education Semester II Students

No	Classification	Number Students	Percentage	Description
1	A	-	-	-
2	B	-	-	-
3	C	8	88,8888%	L
4	D	1	11,1111%	Tl
	Total	9	100%	

Description:
Pass (L) for score group 5.6 -10
Did not pass (TL) for the group of grades less than 5.6

Based on the data above, it means that the researcher can conclude that efforts to improve learning in second semester students of the Indonesian Language and Literature Education Study Program, Widya Dharma University Klaten. It can be said to be successful even though it is not optimal.

Discussion of Research Results

The discussion of the results of this study covers several domains. There are at least four domains that must be displayed in class action research. The four domains of research results include 1) planning stage, 2) implementation stage, 3) observation stage, and 4) reflection stage. The four stages are analyzed as follows.

Planning Stage

The results of the planning stage carried out by the researcher were asking permission from the Head of the Widya Dharma University Research and Service Center, which was used as a research site. This planning permission is in the form of permission for research entitled *Application Of Discovery Learning Methods To Increase Critical, Tactical, And Innovative Thinking Poles Of Students*. The proof that the research is permitted is the issuance of a

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research assignment letter in the form of a work contract with the number 052/F.02.52/PUSLIT/XI/2023.

The next step is to ask permission from other lecturers who teach Indonesian Language and Literature Education to collaborate in class action research. Furthermore, holding a meeting with other lecturers to equalize perceptions and prepare matters related to the implementation of this research based on the identification that has been done, prepare materials, prepare visual media that will be used, determine the time when the research will take place, and determine the subject matter to be studied. Next is to develop learning scenarios, prepare learning journals, prepare learning resources, prepare evaluation sheets, prepare learning observation sheets, as well as test devices. The next form is to conduct interviews with several lecturers in the field of study, namely Mr. Wisnu Nugroho Aji, S.Pd., M.Pd., Mrs. Dr. Sukini, M.Pd, and Mr. Drs. Gunawan Budi Santoso, M.Hum.

Implementation Stage

The implementation stage is the application of the contents of the action plan, teachers / lecturers / lecturers / implementers who must obey what has been formulated in the design in order to achieve learning objectives. In this stage the researcher obeys what has been formulated in the design, applies naturally, and is not made up. The step taken at this stage is to carry out learning in accordance with the lesson plan using the discovery learning method.

Evidence of implementation has been carried out through learning Language Learning Theory which was attended by a number of students, of which there were a total of nine students (one was inactive). One student who was inactive was named Edy Irawan. The implementation of learning by using the discovery learning method is carried out naturally in the sense that it is not made according to the schedule given from the Dean to the lecturer (researcher).

Observation Stage

The observation stage or observation has a function to document the various effects of related actions. Observation is future-oriented, meaning that observation is intended to obtain various information used for future steps. The results of careful observation will provide input used in the reflection step to improve action or maintain action.

The data obtained during the observation showed that learning that was carried out conventionally, in the form of unidirectional lectures, proved unable to produce the expected learning outcomes. In other words, learning that is not creative is not optimal. This is very different from the learning process carried out with active, innovative, creative, effective, fun, enthusiastic, optimistic, compact, embracing and weighty learning (read: Paaikem Semok Gembrot) supported by reliable methods, it must have a significant impact on the learning process.

Reflection Stage

Departing from the results of the research that has been done and departing from planning, implementation, observation, it appears that the implementation went smoothly. But what needs to be known from the results obtained, starting from the pre-cycle, cycle I, and cycle II stages, everything went smoothly and there was an increase for each student. This proves that the discovery lerning method is quite good in the learning process. However, it needs to be reviewed, especially from the thinking process of students, motivation from teachers or lecturers to be more active in finding tricks or certain ways to solve problems that have not been completed or methods that are more reliable or better to solve them.

The reconstruction of the actions that have been carried out or revealed again shows that creativity, critical thinking patterns, enthusiasm, and motivation need to be improved and not to experience discouragement. Learning to continue to solve problems is a wise step both at the level of students and students and includes teachers or lecturers themselves.

Application of Discovery Learning Method to Improve Students' Critical, Tactical, and Innovative Thinking Patterns

From the learning that has been done by researchers at the pre-cycle stage, there are no satisfactory results. None of the students got good grades. All were still below the passing average. This is caused by several things, for example, the methods used by teachers or lecturers are still not great, not supported by adequate teaching aids, and students or students are still less focused, less literate (reading a lot), less actively involved in learning, especially in solving problems that are considered difficult or problematic.

By making improvements to cycle I learning that applies the discovery learning method, with the help of props and student worksheets (LKS), students (students) have experienced value gains even though they are not significant (meaningful). In fact, the achievement results in cycle I are still not satisfactory, in the sense that they have not met the expectations of the researchers. The results of cycle I students who scored above the passing standard were not significant and not as expected. Why? Because only two students have increased or can be said to have passed. Even then it's not good enough. The two students are 1) Putri Parazita Nur Azizah (with a score of 6.0); 2) Puji Rahayu with a score of 5.75. That means only 22.222% of students (students) can be said to have passed so that the other seven students who have not passed (77.7777%) are still declared failures. For this reason, the next step to close the shortcomings was improved in improving learning in cycle II.

After the improvement of learning in Cycle II with discovery learning and learning models and a high spirit of learning, which has developed students' understanding of the importance of creativity, spirit, group work, and how to find answers quickly, the results they get can increase. It is shown by the number of students who got the results of student grades to eight students or 8.8888% increased. There is only one student who still has not increased his score. But in percentage terms, the failed student has increased quite a bit even though it is still in the failed corodor (not yet graduated). So if the percentage is 1.1111% failed. For more details, the graduation picture can be seen in the following diagram below.
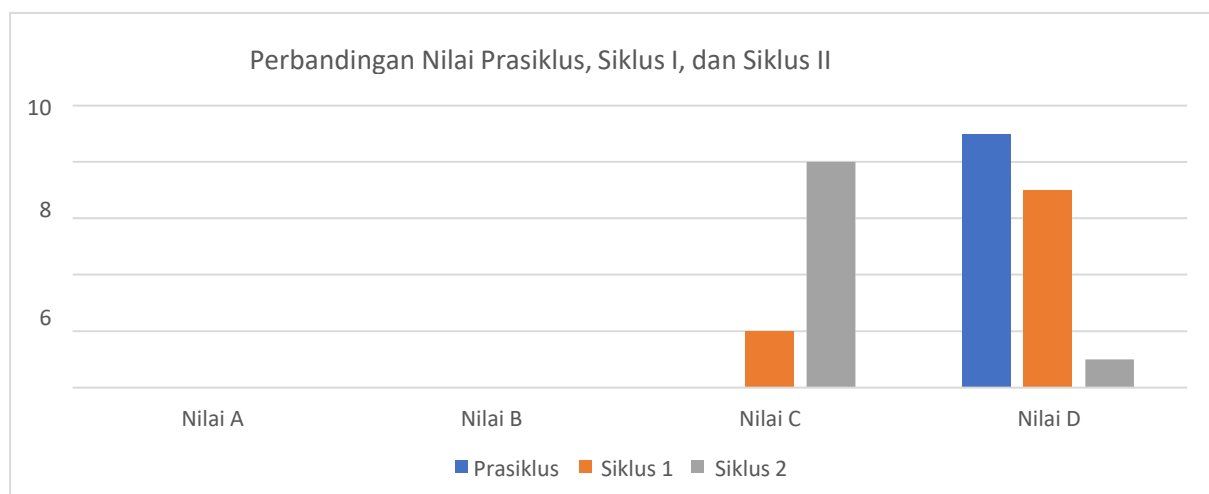

Diagram 1. Comparison of Learning Improvement Results from Pre-Cycle, Cycle I, and Cycle II

If the learning outcomes are expressed in percentages, they are as follows.

Percentage before improvement

Students who scored 8.0 - 10 were 0 students / none (0%)

Students who scored 6.1 - 7.9 were 0 students / none (0%)

Students who scored 5.6 - 6.0 are 0 students / none (0%)

Students who scored below 5.6 were 100% (all scored poor/good.

Percentage of grade improvement in cycle 1

Students who scored 8.0 - 10 were 0 students / none (0%)

Students who scored 6.1 - 7.9 were 0 students / none (0%)

Students who scored 5.6 - 6.0 were 2 students (22.2222%)

Students who scored below 5.6 were 7 students (77.7777%).

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Percentage of grade improvement in cycle 1
Students who scored 8.0 - 10 were 0 students none (0%)
Students who scored 6.1 - 7.9 were 1 student (11.1111%)
Students who scored 5.6 - 6.0 were 7 students (77.7777%)
Students who scored below 5.6 were 1 student (11.1111%)

Based on the score data, it can be seen clearly that at the pre-cycle stage not a single student passed the test. In Cycle I, there was an increase in learning outcomes which on average rose in Cycle I an average of 22.222% and in Cycle II the average rose 100% even though there was one student who was still in the failure stage or did not pass. So, it can also be concluded that through the use of the discovwery learning method, student learning achievement in language learning on the subject of Language Skills has increased. Furthermore, an illustration of the development of the increase can also be seen in the graph below. The graph below illustrates in detail the acquisition of pre-cycle scores, cycle I, and at the same time Cycle II.

Comparison Chart of Pre-Cycle with Cycle I

The following is a picture of the comparison graph of the learning outcomes of Semester II students, Indonesian Language and Literature Education Study Program, Widya Dharma University Klaten. Thigh pre-cycle stage with Cycle I. From the data in the diagram below, it can be seen that before the learning treatment using the discovery learning method, the achievement results of Widya Dharma Klaten University students were said to be very bad. This is clearly shown in graph 1 below. It is clear that the increase in their academic achievement is still poor. The following is a description of the increase in academic achievement of Semester II students, Indonesian Language and Literature Education Study Program.

Perbandingan Hasil Prasiklus dengan Siklus I

Diagram 2. Comparison Chart of Learning Improvement Results Between Pre-Cycle and Cycle I

From the explanation of the graph above, it can be seen that before the application of the discovery learning method there was not a single student who got an A (very good) as well as those who got a B (good), and not even a C grade. So, it can be said that none of the students passed the pre-cycle stage.

Slightly different from the development of students' academic achievement after getting treatment in Cycle I. In the graph 2 above, it can be seen that there were already two students who got medium grades (passed) although they were still in the medium category. Two

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students got a grade C (22.2222%), and seven students got a grade D (failed). So at this stage of cycle II, if the percentage is 77.7777%, it is still in the category of jelaek or failure.

Cycle I and Cycle II Comparison Chart

The comparison between Cycle I and Cycle II can be seen in the next graph. The following is a graphical image of the comparison of the learning outcomes of the second semester students of Widya Dharma University Klaten, Department of Education of Indonesian Language and Literature thigh stage Cycle 1 with Cycle 2.

Perbandingan Siklus I dan Siklus II

Diagram 3. Comparison Chart of Learning Improvement Results between Cycle 1 and Cycle 2

From the explanation of Figure 3 above, it can be seen that after the application of the discovery learning method, the development of academic achievement of second semester students, Widya Dharma University Klaten, Indonesian Language and Literature Education Study Program in cycle II, has increased quite well. Good here does not mean that the grades are very good but the number of students whose grades have increased all (in terms of quantity). Students who got A (very good) grades were zero, good grades (B) were also zero. However, the C grade increased to 77, 7777%. Based on the above explanation, it can be concluded that the application of the discovery learning method was declared successful. All students experienced an increase in grades both at the Cycle I and Cycle II stages. Indeed, there is still one student who has not achieved that success (has not passed) but in gradation the student can be said to have improved (increased achievement).

CONCLUSIONS

The implementation stages from Pre-Cycle, Cycle I to Cycle II, the learning improvement activity using the discovery learning method showed significant progress. In the Pre-Cycle, the average score was 4.3611, which then increased to 5.3333 in Cycle I, reflecting a 22.29% improvement. However, this was not optimal as some students still struggled to grasp the material and formulas needed to solve linguistic problems. In Cycle II, the average score further increased to 6.083, which, while not categorized as excellent in terms of quality, demonstrated success in quantity, as all students showed improvement, even if not significantly. This progress indicates that students became more adept at answering questions correctly, understanding the discovery learning method, and fostering teamwork. The optimal use of this method effectively stimulated creativity, collaboration, and curiosity, creating a conducive learning environment where objectives were met efficiently. Ultimately, the application of discovery learning contributed to an engaging,

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innovative, and enjoyable learning atmosphere characterized by Active Learning, Innovative, Creative, Effective, Fun, enthusiasm, optimism, cooperation, and meaningful experiences or in Bahasa Indonesia called *PAIKEM SEMOK GEMBROT*.

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