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EFFORTS TO INCREASE LEARNING RESULTS OF CLASS VIII SMP IT FITHRAH INSANI ON LEARNING SYSTEM OF LINEAR TWO VARIABLE EQUIPMENT USING DIRECT INSTRUCTION MODEL WITH MEDIA POWERPOINT

Hendra Gunawan1, Elis Siti Komara 2, Din din Syarif3

[1] SMK Penida 2 Katapang
[2] Yayasan Fithrah Insani
[3] SMPN 2 Cililin
[1] hendra_ff@yahoo.co.id, [2] elisitikomara@gmail.com, [3] dindinsn.92@gmail.com

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Abstract

This type of research is a classroom action research. The purpose of this study is to create a more effective teaching design on Linear Two Variable (SPLDV) System Variables (SPLDV) with one Direct Instruction lever model or direct spinning with powerpoint media in an effort to improve student learning outcomes. Abstract mathematical material requires a technique in the delivery to the students so that the material can be accepted and well understood by learners, especially on SPLDV material that contains steps of long and repetitive workmanship. The need to apply a model that can help participants in planning, monitoring and evaluating their thinking processes. In this case the need to apply a model of learning. This classroom action research is conducted in three cycles. Through this research, after application of Direct Instruction model or direct learning with powerpoint media on learning of Two-Variable Linear Equation System (SPLDV), resulted in increasing student activity in every cycle. Learners become more accustomed to planning, monitoring, and evaluating their thinking processes and accustomed to working on SPLDV questions. So also with the increasing student learning outcomes, in every cycle of the ability to work on their math problems both as a whole and every indicator continue to increase. And the action is stopped in cycle III because all the success criteria targeted has been achieved.

Keywords: Learning outcomes, Direct Instruction, Media, Power-point

Abstrak

Jenis penelitian ini adalah penelitian tindakan kelas. Tujuan penelitian ini adalah unluk menciptakan desain ajar yang lebih efektif pada materi Sistem Penrsamaan Linear Dua Variabel (SPLDV) dengan salah satu model pembelaran l Direct Instruction atau pembelaran langsung dengan media power point dalam upaya meningkatkan hasil belajar siswa. Materi matematika yang abstrak memerlukan suatu teknik dalam penyampaiannya kepada anak didik, agar materi tersebut dapat diterima dan dipahami dengan baik oleh peserta didik, khususnya pada materi SPLDV yang mengandung langkah-langkah pengerjaan yang panjang dan berulang. Perlu diterapkannya suatu model yang dapat membantu peserta dididk dalam merencanakan, memantau, dan mengevaluasi proses berpikirnya. Dalam hal ini perlu diterapkannya sebuah model pembelajaran. Penelitian tindakan kelas ini dilakukan dalam tiga siklus. Melalui penelitian ini, setelah diterapkannya model Direct Instruction atau pembelajaran langsung dengan media power point pada pembelajaran Sistem Persamaan Linear Dua Variabel (SPLDV), mengakibatkan aktivitas siswa dalam setiap siklusnya makin meningkat. Peserta didik makin terbiasa untuk merencanakan, memantau, dan mengevaluasi proses berpikirnya serta terbiasa mengerjakan soal-soal SPLDV. Begitu juga dengan hasil belajar siswa yang makin meningkat, pada setiap siklus kemampuan mengerjakan soal matematika mereka baik secara keseluruhan maupun

perindikatornya terus meningkat. Dan tindakan dihentikan pada siklus III, karena seluruh kriteria keberhasilan yang dituju telah tercapai.

Kata Kunci: Hasil belajar, Direct Instruction, Media, Power point

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INTRODUCTION

Norman, S Adzwar (2006) argued that to face the 21st century is expected to be colored by competition, the Indonesian nation absolutely needs to have quality and high-quality citizens. In the effort of developing Indonesian human quality, the minimum benchmark that must be achieved is the growth of logical thinking ability and independence attitude in the students. For that, the learning system that prioritizes mathematics and other science becomes a prerequisite for the education process to shape the Indonesian people who are able to face and anticipate the challenges in the future, So to face the challenges in the 21st century students must be qualified in solving two-variable linear equations system (SPLDV), one of the benefits of SPLDV in mathematics specifically determines the coordinates of the two-line cut points, determines the equation of the line, determines the constants on an equation. To solve everyday problems that require the use of mathematics, the first step to do is to develop a mathematical model of the problem. The data contained in the problem was translated into one or more PLDV. Further completion of SPLDV is used to solve the problem. The problems can be about numbers and numbers, age, money, investment and business, size, and so on.

Based on the results of interviews and preliminary observations with teachers of mathematics class VIII in SMP IT Fitrah Insani, obtained information that in the academic year 2016/2017 many errors found when students work on the problem in the Two-Variable Linear Equation System. This can be seen from the results of replication with the number of participants 22 students, there are 15 students who get the value of the test that is still below the Minimum Criteria of completeness defined by the school, which is 70. Errors made by students generally solve equations, math and apply in everyday life.

The purpose of this research is to create teaching design that proved effective through SPLDV material with the contextual approach, one of the users is Direct Instruction model in order to improve student learning result. Besides, through this research is also expected to push the effort of designing mathematics teaching materials.

The plan of a classroom action research with a lesson study base containing the strategies to be developed will be revised, supplemented, reduced, by 3 cycles, 3 interviews, and 3 times data collection, with the following plans:

No	Aspect	Description
1	Difficulties commonly experienced by students	1. Students have difficulty understanding SPLDV 2. Difficulty in distinguishing PLDV and SPLDV.

No	Aspect	Description
		3. Resolve SPLDV related to daily life 4. Make a mathematical model of the story problem
2	Teachers how	to teach teachers how many lectures and exercises
3	Master Model	Elis Siti Komara, S.Pd.
4	Essay Evaluation	Test Questions

METHOD

This type of research is a class action research based on lessening study, which is intended to provide information on how appropriate action to be applied to learners so that the learning outcomes increase. Therefore research is focused on teacher actions to increase the learner's activity. This research was conducted in three cycles, This research was conducted from 13 November 2017 until 17 November 2017 in the odd semester of the academic year 2017-2018 at SMP IT Fithrah Insani Regency West Bandung with the subject of research is student of class VIII with number of students counted 44 people consisting 22 men and 22 women. .

The test used is written test in the form of an essay. The data obtained is calculated percentage and average are then seen an increase or decrease of each cycle, test cycle I and II (after giving action); and observation sheets for teachers and students for the conditions of action implementation.

Sources of data are research personnel consisting of teachers and students, the type of data that is quantitative data and qualitative data obtained through test results, observations and journals. And the data collection methods are: (1) Data about learning condition SPLDV was taken by using observation sheet covering observation to teacher and learner; (2) Data on learning achievement was taken by using test included cycle I, second cycle test and cycle III test, and; (3) Data on reflection is taken using the journal.

Data obtained from this research that comes from the test cycle I, the test cycle II and test cycle III. All data is processed using Microsoft Excel by calculating the average and see the average ratio of each cycle.

RESULTS AND DISCUSSION

Results

1. Cycle Research Results 1

a. Planning (Plan)

The thing done at the planning stage is the making of learning implementation plan (RPP) based on the syllabus used as the research reference. The RPP made for the cycle I consist of 1 meeting on the material "Determining the SPLDV Completion Set using a graphical method" using Direct Instruction model with powerpoint media. Based on the learning steps in RPP cycle I. Implementation of Direct Instruction model with power point media in cycle I is done by lecture, question-answer, and discussion method and has indicators: (1) Defines linear equations of two variables; (2) Describe the model and system of linear equations of two variables; (3) Determine the value of variables of linear equations of two variables in everyday life; Then the researcher makes an observation sheet addressed to teachers and

students (observed aspects are based on learning steps in the lesson plan), preparing a reflection journal sheet and designing an evaluation tool for the first cycle test. Another preparation is to further strengthen teachers' knowledge and understanding of learning implementation with Direct Instruction model with powerpoint media

b. Implementation of Action (Do)

Implementation of the action is done by a teacher of mathematics model class VIII SMP IT Fithrah Insani, while researcher act as an observer (observer). The first cycle of learning is carried out in a single meeting. The first class presentation was held on Monday 13 November 2017 with the material "Determining the SPLDV Completion Set using a graphical method". Prepared RPP using Direct Instruction model with powerpoint media with lecture method and discussion and question and answer. After the first cycle of learning has been completed, teachers and researchers discuss some of the shortcomings that occur in the learning activities. In this case, the teacher is still less to provide practice questions. If done will increase the knowledge and mastery of student concepts for the better. Classroom learning is ensured to be more active and enjoyable. In addition, teachers are less motivational so that participants can solve problems well, solve problems that are not routine, applying mathematics in daily life, and prove. Results of teacher and research discussions in the form of deficiencies in learning will be improved in the second cycle.

Picture 1
Situation Learning in Cycle 1

c. Evaluation (See)

After one meeting to complete the basic competency "Describing the system of linear equations of two variables and their completion associated with contextual problems", an evaluation was conducted with the test of the cycle I on Monday, November 13, 2017. This activity was conducted to find out the extent of mathematical problem-solving students on the material "SPLDV" after learning with Direct Instruction learning model with Media Powerpoint.

The test results indicate that the student has not completed or the value is still below the KKM. The results of this test also show students' mastery of classical to the subject matter. So there needs to be additional action so that they really understand the material "SPLDV" this.

The results of the first cycle test that is only reached 11% are complete. This shows that students' understanding of SPLDV material of junior high school students of IT Fithrah Insani is still low. In addition, the results of the first cycle test scores are also important to look at the early mathematical abilities of SPLDV material. It aims to know the learning outcomes with Direct Instruction model with Media PowerPoint for every meeting conducted.

Ficture 2
Cycle Evaluation 1

2. Cycle Research Results 2

a. Planning (Plan)

Based on the results of observation and evaluation on the action of the cycle I, the researchers together with the model teacher to plan the action cycle II, so that the deficiencies that occur in the implementation of the action cycle I can be improved and achieve maximum results. The things that teachers need to improve the implementation of the second cycle action are as follows: (1) Teachers should give more practice questions; (2) giving students opportunities to discuss; (3) Teachers should provide more guidance to students both individuals and groups in the learning process with Direct Instruction model with PowerPoint media.

The things that are done at this stage is the making of learning implementation plan (RPP) based on the syllabus used as the research reference. The RPP made for cycle II consists of 1 meeting on the material "SPLDV" by using Direct Instruction model with Media PowerPoint. Based on the lesson steps in RPP cycle II. Implementation of Direct Instruction model with Media PowerPoint in cycle II is done indicator: (1) Defines linear equation of two variables; (2) Describe the model and system of linear equations of two variables; (3) Determine the value of variables of linear equations of two variables in everyday life.

Then the researcher makes an observation sheet addressed to the teacher model and students (observed aspects are based on the learning steps in RPP), prepares the reflection journal sheet and designs the evaluation tool for the second cycle test.

Another preparation is to further strengthen the knowledge and understanding of teachers on the implementation of learning with Direct Instruction model with Media PowerPoint.

b. Implementation of Action (Do)

Implementation of the action is done by a teacher of mathematics model class VIII SMP IT Fithrah Insani, while researcher act as an observer (observer). The second cycle learning action was conducted in one meeting. The first class presentation was held on Wednesday 15 November 2017 with the material "Determining the SPLDV Settlement Association using the Substitution and Elimination method". Prepared RPP using Direct Instruction model with Media PowerPoint with lecture method and discussion and question and answer. Then the teacher gives more exercise questions and provides opportunities for students to discuss with friends or with the group and more motivate the learners that math is indispensable in everyday life. After the second cycle of learning has been completed, model teachers and researchers discuss some of the shortcomings that occur in learning activities. In this case, the

teacher is less to provide guidance in doing the exercise questions so that at the time of the test is still a lot of wrong or wrong. If done will increase the knowledge and mastery of student concepts for the better. Classroom learning is ensured to be more active and enjoyable. In addition, fewer opportunities for learners to present the results of discussions with the group. The results of teacher discussion of models and researchers in the form of deficiencies in learning will be impro ved in the third cycle.

Ficture 3
Cycle Learning Situation II

c. Evaluation (See)

After one meeting to complete the basic competency "Describing the system of linear equations of two variables and their completion associated with contextual problems", an evaluation was conducted with the name of the first cycle test on Wednesday, November 15, 2017. This activity was conducted to find out how far mathematical problem-solving students on the material "SPLDV" after learning with Direct Instruction learning model with Media Powerpoint.

The test results indicate that the student has not completed or the value is less than the KKM less than cycle 1. The results of this test also show students' mastery of the classical subject matter. So there needs to be additional action so that they really understand the material "SPLDV" this.

Results of the second cycle test that is only reached 43% complete. This shows that students' understanding of SPLDV material of junior high school students of IT Fithrah Insani has increased. In addition, the results of the second cycle test score are also important for the action to be taken in cycle III of SPLDV material. It aims to know the learning outcomes with Direct Instruction model with Media PowerPoint for every meeting conducted.

Ficture 4
Evaluation of Cycle II

3. Cycle Research Results 3

a. Planning (Plan)

Based on the results of observation and evaluation on the action of cycle II, the researchers together with the model teacher to plan the action of cycle III, so that the deficiencies that occur in the implementation of action cycle II can be improved and achieve maximum results. Things that should be improved by teachers on the implementation of action cycle III are as follows: (1) Teachers should provide more guidance to learners when doing exercise questions; (2) giving the students the opportunity to present the results of the discussion with the group's friends to find out where the error is; (3) Teachers should provide more guidance to students both individuals and groups in the learning process 3with Direct Instruction model with PowerPoint media.

The things that are done at this stage is the making of learning implementation plan (RPP) based on the syllabus used as the research reference. The RPP made for cycle II consists of 1 meeting on the material "SPLDV" by using Direct Instruction model with Media PowerPoint. Based on the lesson steps in RPP cycle II. Implementation of Direct Instruction model with Media PowerPoint in cycle II is done indicator: (1) Defines linear equation of two variables; (2) Describe the model and system of linear equations of two variables; (3) Determine the value of variables of linear equations of two variables in everyday life. Then the researcher makes an observation sheet addressed to the teacher model and student (observed aspects are based on the learning steps in the lesson plan), prepares the reflection journal sheet and designs the evaluation tool for the cycle III test.

Another preparation is to further strengthen the knowledge and understanding of teachers on the implementation of learning with Direct Instruction model with Media PowerPoint.

b. Implementation of Action (Do)

Implementation of the action is done by a teacher of mathematics model class VIII SMP IT Fithrah Insani, while researcher act as an observer (observer). The second cycle learning action was conducted in one meeting. The first class presentation was held on Wednesday 17 November 2017 with the material "Determining the SPLDV Completion Set using a mixed method (Substitution and Elimination)". Prepared RPP using Direct Instruction model with Media PowerPoint with lecture method and discussion and question and answer. Then the teacher gives more practice questi ons and the teacher provides guidance when the students in doing the questions and provide opportunities for students to present the results of risk with friends or with the group and more motivate the learners that math is indispensable in everyday life. After the learning cycle 3 is completed, model teachers and researchers discuss some of the shortcomings that occur in learning activities. Test results in cycle III show better value than cycle II.

Ficturere 5
Learning Situation in Cycle III


c. Evaluation (See)

After one meeting to complete the basic competency "Explaining the system of linear equations of two variables and their completion associated with the contextual problem", the evaluation was conducted with the test of cycle III on Thursday, November 17, 2017. This activity was conducted to find out how far the problem solving of mathematics students on the material "SPLDV" after learning with Direct Instruction learning model with Media Powerpoint. The test results indicate that there is an increase in the number of students who completed or the value above the KKM. The results of this test also show students' mastery of classical to the subject matter. So there is no need for additional action in learning.

The results of the third cycle test that has reached reach 90% which is complete. This shows that students' understanding of SPLDV material of junior high school students of IT Fithrah Insani has increased.

Discussion

Research Results Based on the results of the evaluation test cycle 1, can be seen the error of each research subject for each item of the work done. The subjects of junior high school students of IT Fithrah Insani each have errors in item no.2, no. 3, No. 5 and no. 6, test questions consisting of 6 questions. However, the mistakes made between one research subject and the other on each item are not the same. The results of the work of the subjects of research can be seen in the annex of the data presented in a fragment of the results of written tests on research instruments for each research subject. From the results of a written test of each subject, the student error analysis is performed. The first type of error is in reading the problem, those who do not understand there are two problems and must find the value of a and b by using elimination and substitution and substituted into the next equation.

In General Type, This type of error can be known at the time of the interview. The type of error is the misunderstanding of the problem. Students are considered to do this type of error if the student makes a mistake in writing the problem on the problem, illustrating the problem of solving the problem of linear system problems.

The student is deemed to have made this mistake if he or she is unable to perform algebraic manipulations to find the values of x and y. After analyzing the results of the research subject, it is necessary to strengthen the validity of the analysis based on the answer sheet of the research subject. Strengthening, in this case, is called the process of triangulation that is comparing the answer sheet of research subjects with interview results. Based on the comparison process, determined the validity of the data. Consistent data on the answer sheets and interview results are valid. Then, from the data that has been determined the validity of the verification made of each research subject includes the error.

The result of research on cycle II based on a result of evaluation test can be seen the error of each research subject for each item of matter done. Show improvement can be seen from the result of student answers each item and the complete in doing the problem SPLDV. From the results of the test the average student misunderstood the story of a less understood reading and change it in the mathematical model, in general, this error can be known at the time of the interview.

Errors in understanding the problems contained in the problem of students make mistakes in writing problems on the problem, illustrating problems solving problems linear system

problems. Students are considered less able to do the algebraic manipulation to find value, from the above it is necessary reinforcement to strengthen the validity of the analysis based on the answer sheet of research subjects. Reinforcement is required only in making mathematical models.

The results of the research in cycle III based on the results of the evaluation test can be seen the error of each research subject for each item of the work done. Shows improvement can be seen from the results of student answers each item and the thorough in working on the problem SPLDV. From the results of the average student test miscalculated the story of a less understood reading the problem and change it in a mathematical model to understand and understand. Almost all students can change and create a mathematical model, this can be known from during the interview took place.

Understanding the problems contained in the problem students too can solve it, illustrate problems and solving problems of the linear system better. Students who are deemed less able to perform algebraic manipulations to seek for reduced value.

Figure 6. One of the Child Test Results in Cycle 3

CONCLUSION

Based on data that has been done during the research, it can be concluded the following things:

1. Implementation of Direct Instruction method can improve student learning outcomes in class VIII IT Fithrah Insani on SPLDV lesson. It is characterized by the increasing quality of activities and responses of students in solving problems provided by teachers, increased communication skills and student cooperation and learning outcomes obtained by students. Such improvements include: (a) increased student involvement in the learning process (b) increasing student co-operation in the learning process. In general, improving the quality of student learning process appears in the emergence of student enthusiasm in following the learning.

2. With Direct Instruction approach and using IT teachers get ease in creating and innovating on their learning, more effective and efficient time to achieve learning objectives, thinking effectively in solving simple problems related to SPLDV problems qualitatively, performing quantitative analysis using data observation of the students, as a good facilitator and observer and successfully stimulate the students' ability and more successfully inculcate positive attitudes to students.

3. Improving the quality of learning process, after implemented Direct Instruction model and using IT, the quality of student learning outcomes also increased. These improvements include: (a) increasing feelings of satisfaction in students and (b) increasing psychomotor, the effective and cognitive value in self-learners.

REFERENCES

Achmadi dan Supriyanto. Faktor-faktor yang Mempengaruhi Prestasi Belajar. Remaja Rosdakarya : Bandung , 1990

Arikunto, Suharsimi. Manajemen Pengajaran secara Manusiawi. Jakarta : Rineka Cipta. 1993

Hamalik Oemar. Proses Belajar Mengajar, Bumi Aksara : Bandung, 2001

Heris, H., Sumarmo, U. Penenitian Pembelajaran Matematika , Refika Aditama Bandung 2014

Purwodarminto, Kamus Besar Indonesia Bahasa Indonesia Departemen Pendidikan Dan Kebudayaan Jakarta ,1995

Lestarai. E.K, Yudhanegara,R.M, Penelitian Pendidikan Matematika, Refika Aditama : Bandung, 2015

Nurman, Saifudin Azwar. 1996. Pengantar Psikologi Intelegensi, Pustaka Pelajar Jogyakarta: 2006

Sudjana Nana, Cara Belajar siswa Aktif Dalam Proses Belajar Mengajar. Sinar Baru Algensindo , Bandung 1998

Surya, Moh. (1992). Psikoiagi Guru Konsep Aplikasi. Alfabeta : Bandung , 2015

Suharsimi Arikunto, Dasar – Dasar Evaluasi Pendidikan, Bumi Aksara; Jakarta 1992.

Winkel, WS. Bimbingan dan Konseling di Institusi Pendidikan. Gramedia : Jakarta, 1987