The Improvement of Mathematics Achievement by The Use of an Integral Task Module

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Abstract

This current class action research aims at the improvement of learning achievement on the topic of integral by the use of task module. A learning model is one factor affecting students' achievement. The students' daily learning achievement of grade XII TPHP D SMK (Public Vocational High School) I Bawen has not met the school minimum standard. It can be seen from the students' performance that they are not motivated, enthusiastic, and active during Mathematics learning process, and their learning outcome has not fulfil the optimal standard. It remains under 75 as the minimum of school learning completeness (KKM) of 75. So that, it requires the implementation of learning model that can improve students' learning achievement by using task module on the integral topic discussion. Notably, this research occupies the method of CAR (Class Action Research) through two cycles. Each cycle includes four stages namely planning, action, observation, and reflection. Further, the data are analysed quantitatively (learning scores) by providing descriptive analysis, and the qualitative data are in the form of information that describes students' expression upon their understanding of the learning subject (cognitive), students' attitude toward the new learning method, their activities in the learning, attention, enthusiasm in learning, confidence, learning motivation, etc. The result concludes that each cycle displays the improvement of learning achievement in which respectively the percentages are 30% in the first cycle and 93,33 in the next one. In the first cycle, there are 21 students getting lower scores under 75, and the class average point is 59,467. Whereas, in the cycle II, only 2 students achieve the scores below 75 by the class average point of 84,33. Thus, this

research defines: 1) the use of module improves learning achievement on the integral topic discussion; 2) the learning activities transform from teacher centred into interactive.

Keywords: *learning achievement*, *module use*, *integral topic discussion*

Introduction

The process of Mathematics learning attentively starts from recognising issues on the context and situation based on the contend standard (Hasratuddin, 2013: 132). By so doing, students will scaffold under the supervision to master Mathematics concepts. Mathematics learning should remain on the long term memory, so the materials will stay longer on the brain. Such circumstance possibly takes place if the learning process is motivated and interesting. The condition will occur if the teachers prepare the class well. Their preparation is designing learning activities (Djamarah, 2010:1). Those activities include teaching facilities, teaching tools, and media. Well established preparation will make teacher confident and reduce the misconduct that may happen. Such teacher condition will lead students to have more trust for supervision. Maintained relation between teachers and students promotes students' learning achievement (Novitasari, 2016: 9). This is the expected condition for Mathematics learning in each class. The use of conventional method creates difficulties for students in finding answer for assessment tasks compared to the daily exercise tasks. The following is the assessment task result of grade XII TPHP based on school documentation.

Table 1. the data of assessment task result of grade XII TPHP-DSMK Negeri (Public Vocational High School) I Bawen on the subject of Mathematics on the integral topic discussion.

Criteria	Assessment	
	Number	**Percentage**
Pass	**3 students**	**10 %**
Remedy	**27 students**	**80 %**
Total	**30 students**	**100 %**
Average	**51,90 %**	

According the above table, there are 80 % students do not pass the minimum of learning completeness (KKM), 10 % pass, and 51,90 the class average score. It can be seen that the majority remains under KKM (80%), or they do not achieve the school score standard. Such low performance is affected by several factors such external one. Relatively, the students of grade XII TPHP D are conducive following the Mathematics learning, but they solely listen to teacher's instructions. The students only execute the given exercise from the teachers. This pictures show students' huge dependency toward teachers. They tend to annotate what written on the board and less pay attention to teachers' explanations. As consequence, the students find the annotation difficult to understand. The exercise tasks will be easy for students that listen to teachers' explanations, but the other students find the questions difficult.

Based on those phenomena, the follow up is a research entitled "The Improvement of Mathematics Learning Achievement by the Use of Integral Task Module for Students of Grade XII TPHP D SMK Negeri (Public Vocational High School) I Bawen at the Even Semester on the

Academic Year of 2017/2018". For the research question, it tries to reveal the issue of how the use of the integral task module to improve learning achievement of the students of grade XII TPHP D SMK Negeri I Bawen at the even semester on the academic year of 2017/2018. Meanwhile, the objective of this research is to find out the use of Mathematics modules toward learning achievement on the integral topic discussion for students of grade XII TPHP D SMK Negeri 1 Bawen at the even semester on the academic year of 2017/2018.

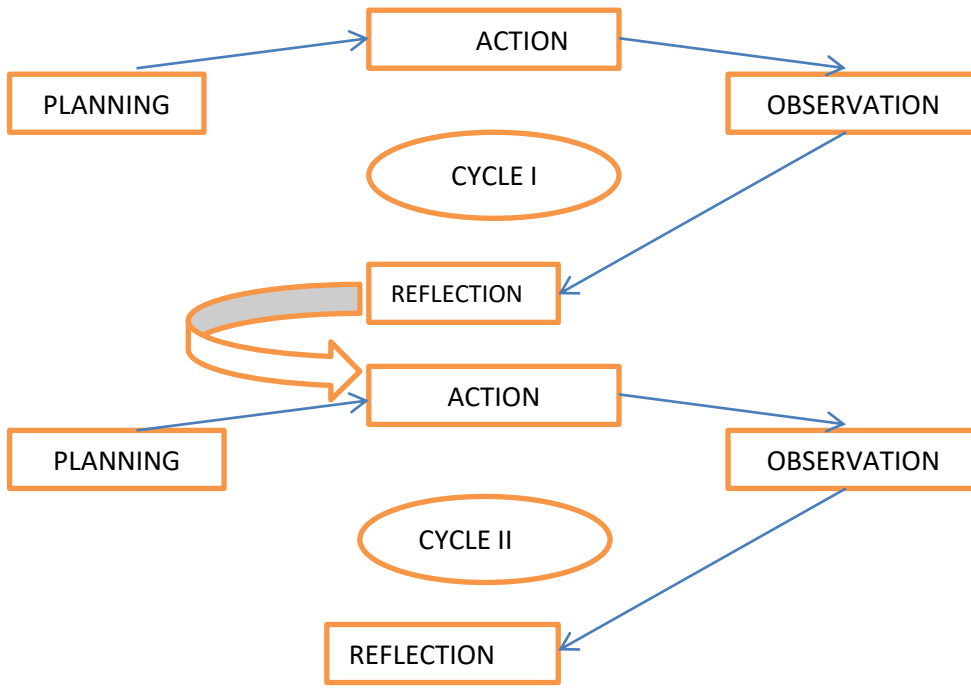
Methodology

The current research belongs to field research conducted in SMK Negeri I Bawen, Semarang regency at the even semester on the academic year of 2017/2018. The research subjects are the students of grade XII TPHP D of 30 students. It takes place in January to February 2018 by implementing Mathematics module to improve students' learning achievement.

In populating data, the research follows these steps: 1) Observation, the researcher directly observes the attitude and the occurrence during the learning process; 2) Documentation, the researcher collects and analyses the documents in the forms of written, graphics, or electronic to get preliminary data including students' names, students' identity number, scores of assessment task; 3) Interview, this method is to access teachers' information about modules in Mathematics learning process; 4) test, it is applied to analyse the progress of teaching and learning process; 5) Observation, it aims to assess the test at the end of

teaching and learning process; and 6) Reflection, this step is to find out the strengths and weaknesses of learning process and design for remedial.

The data population tool is in the form of test based on the materials. The field note is employed for documentation of all occurrences during teaching and learning process e.g. photos. For the design, this research follows two cycles by taking CAR model of John Elliot (Widayati, 2008: 91-92). as illustrated in the following:



The learning procedures carried out by the researcher can be overviewed in the lesson plans. To begin the research, the initial test is given to map prior student competency and used to group the population. The conduct of learning is developing and improving based on the result

from the reflection stage at the end of teaching and learning session by giving a test to find out the level of students' understanding. The successfulness indicator is achieved in case minimally 90% students taught with Mathematics module reach KKM score of 75, and the average class score on the integral topic discussion is similar or higher than 75.

In the data analysis technique of CAR, there are two data populated, (Arikunto, 2002): quantitative data (learning scores) that can be analysed descriptively; qualitative data in the written information format that describe students' expression toward the degree of understanding on the subject learning (cognitive), students' attitude upon new learning method (affective), students' activities in learning, enthusiasm in learning, confidence, learning motivation etc.

Discussion

Mathematics learning achievement

Achievement is a term to refer the result from an effort taken by the one. In the sense of learning, achievement accord to the result by the one that learn in a period of time. Learning achievement is categorised in the scope of cognitive attribute that the responses of the measurement are the form of judgement; the responses states the conditions of true or false (Suryabrata, 2000:19). Whereas, Soedijarto (1993: 49) explicates that learning achievement is the mastery by students in taking learning programs based on the stated learning purposes. Based on the above arguments, it can be interpreted that Mathematics learning achievement is a performance indicated by the degree of Mathematics understanding

which is permanent and constant after getting through the process of Mathematics learning.

Module

Module is a complete independent unit and consists of a set of learning activities that designed to help students achieve a number of clear and specific formulated objectives (Nasution, 1982:205). Such formulation can assist students to comprehend what materials to learn attentively. Yulia Ayriza (2008: 215-216) defines module as a written book in the purpose of assisting students learn independently with or without teachers' guidance. The keyword is independent learning, and it is different from other types of books that require references. Module has minimised such case because the elements are simplified. According to Wena (2008:232), module becomes printed media containing learning units and provided with various components, so students can achieve the learning objectives independently, regardless the least guidance from teachers. Students can have self-evaluation, and further determine the next materials to learn.

Functions and purposes of module

Module functions as an independent teaching material as the substitution of teacher function, an evaluation tool, and students; reference materials (Prastowo, 2011:107). Module aims to develop students' independence at the early stage, so the roles of teachers are mitigated. Suryosubroto (1983:18) explains seven purposes of module in teaching process: 1) to improve efficiency and effectiveness in achieving learning objectives; 2) to encourage students take education based on their own pace and

performance; 3) to allow students comprehend and conduct learning activities independently with or without teacher guidance; 4) to make student do learning self-evaluation; 5) to post students as the centre of teaching and learning activities; 6) to have higher frequency of overview on students' performance after the evaluation at the end of each module; and 7) to emphasis the concept of mastery learning in order to make students learn the module optimally.

According to Prastowo (2011:108), the purposes of compiling or composing modules are namely to promote independent learning by the students with or without teachers' guidance, to moderate the dominant and authoritative roles of teachers, to drill students' honesty, to accommodate the variety of degrees and learning speed, and to allow students self-assessment on their material understanding.

Module characteristics and the procedures to compose

Module is typical to teaching material that has specific characteristics. Mohammad (in Prastowo,2011:110) states several aspects of modules: 1) composed for independent learning system; 2) a holistic and systematic learning program; 3) containing purposes, materials or activities, and evaluation; 4) communicatively presented; 5) in the regard, substituting the roles of teachers; 6) focused and measurable topic discussion scopes; and 7) promoting users' learning activities.

Prastowo (2011: 110) states that there are four stages in composing module; curriculum analysis, defining module title, providing module code, and composing module. The composition stages will be categorised into

formulating basic competence, defining assessment or evaluation tools, material composition, the procedure of teaching, and module structure. The systematic approach in composing module includes six interconnected steps. They are formulating objectives, composing criterion items, analysing students' characters and specifying entry behaviours, putting the order of teaching and finding media, trying out module by students, and module evaluation (Budiyono & Susanto, 2006: 80).

Format and module lay out

Prastowo (2011:141) argues that defining an appropriate module format must consider many aspects, such as avoiding contra-productive frequency and consistency variations, and promote amenity for readers. Module must provide ease to the users, so the format must be systematic.

Table 2. the Format of Module Composition

Before materials	**After presenting materials**	**After materials**
Title	Basic competencies	Individual test
Acknowledgment	Main materials	Post-test
Table of content	Material description	Reinforcement
Introduction	Heading	Expectation
Brief description	Summary	Glossary
Decree	Exercises and	References
Concept mapping	assignments	Key answers
Advantages		
Learning objectives		
The application purposes of the module		

Andriani (in Prastowo, 2011:163) reveals the lay out in composing modules: 1) the size of pages and module format, (2) column and margin, and (3) consistent lay out of table, graphics and diagram with table numbering, graphics, and diagrams.

The selection and the use of modules

The learning using modules is conducted into five phases. The details are as follow: 1) prior to the learning, the teachers briefly explain and direct students' assignments in the module, meanwhile students prepare themselves to get materials from the module; 2) during the learning, the teachers move around to observe students' activities, provide assistance for students who in need, remind students to patiently work on the modules, whereas students read the materials and do the exercises based on the instruction; 3) students conclude the modules. The teachers provide key answers for the students that have reached the end of the modules and explain that students who attain 75% grade will pass and the rest who do not have such achievement will repeat the modules; 4) students who finish the module faster and gain 75% grade will get additional reinforcement exercises, and the rest who have not passed will repeat the same modules; 5) the last phase is evaluation in which teachers distribute test papers after all students complete the modules. Students work on the test papers as learning evaluation.

The Research Result

The general description of research subjects

The research subject is the students of SMK Negeri Bawen of grade XII TPHP D of 30 students. The school effective learning hours begins at 06.30 followed by literacy and habituation at 07.00 to 07.15. The teaching and learning activities start from 07.15 to 15.30 for Mondays to Thursdays. Meanwhile, on Fridays, the teaching and learning activities will be held until 16.00. The levels of social economic condition of the parents are heterogeneous including businessman, civil servant, worker, and employee. The majority of education of the parents is from elementary to high school.

Respondent characteristics

The students' characteristics of grade XII TPHP DSMK Negeri I Bawen are fussy, eager of innovation, giving less respect to teachers as they live in urban area, heterogeneous parent economic conditions, relatively low various care from their parents as the different level of education starting from businessman, civil servant, worker, and employee.

Preliminary condition

Based on the documentation of the result of assessment task, students attain the lower learning achievement. It can be seen from the recapitulation of the result of students' assessment tasks that 90% students have not reached the minimum of learning completeness of the school standard, only 10% of the population pass the standard, and the average class grade is 51,90. Instead of the lower grades, the class psychomotor has

not emerged. It is indicated from the enigma and quiet students during the question and answer sessions. From the facts, the achievement and the psychomotor during the process of learning are categorised into low level under the school standard of 75. Based on the low result of learning achievement of students grade XII TPHP D SMK Negeri 1 Bawen, the researcher conduct class action research based on research plan explained in the previous sections. In this sense, the researcher will implement the method of Mathematics module learning on the integral topic discussion through two cycles.

The analysis of the cycles

Each cycle will consist of 4 steps including: (1) planning, (2) action, (3) observation or evaluation, and (4) reflection (Santyasa, 2007). The cycle I meeting 1 is conducted on Wednesday 24 January 2018, and the meeting 2 takes place on Tuesday 30 January 2018. The cycle II meeting 1 is held on Wednesday 31 January 2018. The time allotment on Wednesday occurs for 3 x 45 minutes (135 minutes). The meeting 2 on Tuesday 6 February 2018 runs for 1 x 45 minutes (45 minutes). The following table is the application of the lesson plans covering two cycles consisting two meetings each.

Each meeting run through 4 stages namely planning, action, observation, and reflection.

Table 3. the Analysis of Cycle I

Stages	**Cycle I**	
	Meeting 1	**Meeting 2**
Planning	1) Composing lesson plan on	1) Reviewing the result

Stages	Cycle I	
	Meeting 1	Meeting 2
	the Integral topic discussion 2) Preparing the module on the Integral topic discussion 3) Material 1 4) Individual test paper	of Individual test paper 1 in case requiring explanation 2) Composing lesson plans on the integral topic discussion 3) Preparing the module on the integral topic discussion 4) Material 2 5) Individual test paper 2
Action	1) Conduction teaching and learning based on lesson plans by incorporating the integral task module	1) Conduction teaching and learning based on lesson plans by incorporating the integral task module 2) Discussing the materials that possibly require more explanation for the preparation of cycle I test
Observation	1) Observing the on-going teaching and learning to find out students' learning activities, recognize obstacles during the learning.	
Reflection	1) Students need to work together in a team as they have not accustomed with and insist to have the team mates from the tables nearby. 2) Students are tedious with the teachers presentation 3) Students are quite fussy	1) Students proceed the discussion without any issues 2) Students have accustomed with group collaboration

Stages	Cycle I	
	Meeting 1	**Meeting 2**
	during the teachers' presentation 1) After the meetings 1 and 2, the evaluation takes place for cycle 1 2) The reflection concludes as follow: a) The highest result of cycle I is 94, and the lowest one is 20 with the class average of 59,467. b) 9 students (30 %) have passed KKM, and 21 students (70%) have not reached the KKM.	

Table 4. the Analysis of Cycle II

Stages	Cycle II	
	Meeting 1	**Meeting 2**
Planning	1. Composing lesson plan on the integral topic discussion 2. Preparing integral task module 3. Material 3 4. Individual test paper3	1. Reviewing individual test paper 3 in case requiring explanation 2. Composing lesson plans on the integral topic discussion 3. Preparing the module on the integral topic discussion 4. Material 4 5. Individual test paper 4
Action	Conduction teaching and learning based on lesson plans by incorporating the integral task module	1. Conduction teaching and learning based on lesson plans by incorporating the integral task module 2. Discussing the materials that possibly

Stages	Cycle II	
	Meeting 1	**Meeting 2**
		require more explanation for the preparation of cycle II test
Observation	Observing the on-going teaching and learning to find out students' learning activities, recognize obstacles during the learning	
Reflection	1. The class is a little noisy when the researcher writes on the board. However, in another occasion, the researcher gives attention while asking questions. 2. There are students that only put their names on a group	The learning has run well
	1. After the meetings 3 and 4, the evaluation takes place for cycle 2 2. The reflection concludes: c) The highest result of cycle 2 is 100, and the lowest one is 70 with the average score at 84,33 d) 28 students (93,33%) have passed KKM. Meanwhile, 2 students (6,67%) have not reached the standard KKM.	

Those cycle tables reveal the facts:

Planning

The further improvement always derives from the result of reflection of the previous meetings. In the meeting 1, students are less collaborative

with the team mate in their groups because they have not accustomed with, and they want the team members are from the nearby tables. Therefore, in the next meetings, the researcher tries to improve and pick out the members of the groups to have vivid collaboration with the team mate. In the meeting 1, there are some students that only put their names on a group. The case is due to weak supervision from the teacher and researcher to guide students. Thus in the next meetings, the researcher afford to have maximum supervision and guidance through discussion.

Action

The cycle I meeting I occurs in 7 March 2018. The presented material is the concept of integral. The teacher distributes work sheets (LKS) before the class begins. LKS contains the order to have discussion and do exercises. The teacher motivates students to raise questions on the topic of indefinite integral. The meeting 2 cycle I takes place in 13 March 2018. The material is indefinite integral. In the meeting 2, the teacher precedes the class by reviewing the previous materials in the meeting 1, and consecutively distributes the paper sheets for discussion and exercise sheets to students.

The cycle II meeting 1 is held in 14 March 2018. The material is definite integral. In the meeting 1, teacher starts the class by giving a material review of previous meeting and distributes the work sheets containing discussion sheets and exercise papers. The meeting 2, cycle II is conducted in 20 March 2018. The material is definite integral. In this

meeting, the teacher initiates the class by reviewing the previous materials and distributes work sheets consisting discussion sheet and exercise papers.

Observation

The observation upon the on-going academic interactions is due to the actions taken. The interactions can be the interaction between students with the learning materials, interaction among students, and interaction between students and teachers. The students that are less active in group discussion are affected by the custom of the use of Mathematics module. The strategy to deal with is by giving the understanding about the benefits of reading. The use the integral module motivates students to be more active in the group discussion. By so doing, among the students reciprocally understand faster on a certain concept.

On the other hand, the less active students in problem solving by using relevant references is caused by the low interest in reading the modules. Besides, there are big number of students that do not possess relevant reference books recommended by the teacher to support learning process. To cope with this issue, the teacher always motivates students to have habits in reading the modules that given by the teacher and practice the exercises within because the modules will be the references to answer questions and assignment. Moreover, reading the modules will increase knowledge and understanding.

Reflection

In the cycle I meeting 1, some students are playing around with their team mates, still discriminating their team mates, do not get used to engage with their groups. In the meeting 2, the teacher tries to teach better, and interact communicatively with all students. In this context, the group has not been well managed, and the result of individual test 1 shows big number of students that do not understand the test questions. However, in the meeting 2, the teacher strives to optimize the time allotment, and students can manage the time to deal with the exercises. The individual test 2 has met the ample amount of time allotment.

In the cycle II meeting 1 and 2, the students have improved from the previous cycle. The students are able to conduct discussion passionately and unified, and the results of discussion and evaluation test are better than the previous cycle. The students find a comfort with their team mate on the groups. The results of individual test 1 and 2 have reached higher grade than the previous meetings. In the cycle II meeting 1 and 2, the reflection concludes that the teacher has conducted the learning procedures properly, guided the group evenly, and facilitated students to have running group work.

The result of this research is presented by the score explanation experienced by the researcher. The score will be described in details at each cycle. The details are in the following.

Cycle I grading

Based on the result of learning achievement in cycle I, the score is written in table 6 below

Table 6. Statistic Description of Learning Achievement of Cycle I

	N	Range	Min	Max	Mean	Std. Deviation
Cycle 1	30	74,00	20,00	94,00	59,467	20,744
Valid N	30					

In table 6, learning achievement of 30 students on Mathematics in cycle I creates standard deviation of 20,744. The lowest grade is 20, but the highest one is 94. The class average score is 59,467 with 74 range. In the following table, it displays the distribution of learning achievement in cycle I

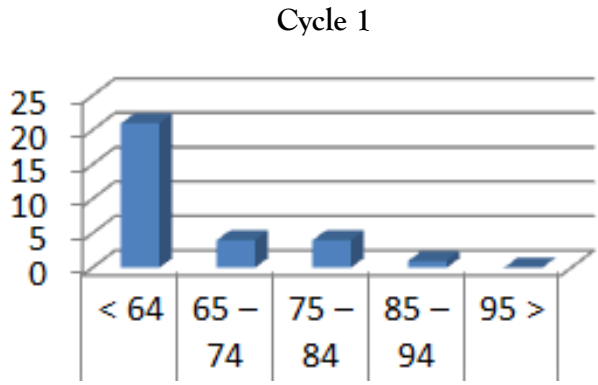
Table 7. The Distribution of Learning Achievement in Cycle I

Category	Range	Frequency	Percentage	Description
Very high	95 >	-	0	Pass
High	85 – 94	1	3,33%	
Moderate	75 – 84	8	26,67 %	
Low	65 – 74	4	13,33 %	Remedy
Very low	< 64	17	56,67 %	
Total		30	100 %	

Table 7 describes the learning achievement in cycle I that 30 students indicate the distribution as in the following: 9 students (30 %) have passed KKM, and 21 students (70 %) are below KKM. The score distribution exhibits the fact that no students are in the range of 95 in the very high category; 1 student has met the range of 85-94 in the high category; 8 students are in the range of 75-84 in the moderate category; 4 students get the score in the range of 65-74 in the low category; and 17 students have achieved 0-64 score in the very low category. Based on the

distribution of learning achievement in cycle I, the result can be pictured on the form of diagram as in the following.

The Diagram of Distribution Graphic of Learning Achievement in Cycle I



The diagram above describes the learning achievement from 30 students in cycle I: 17 students in the score range of 0-64, 4 students in the range of 65-74, 8 students in the range of 75-84, 1 student in the range of 85-9, and none in the range of 95 – 100.

Cycle II grading

Based on the data of learning achievement of cycle II, the scores are illustrated in table 8 below:

Table 8. Statistic Description of Learning Achievement of Cycle II

		Range	Min	Max	Mean	Std. Deviation
Cycle II	30	30,00	70,00	100,00	84,33	8,172
Valid N	0					

In table above, the learning achievement shows that 30 students in the subject learning of Mathematics in the cycle II affect the standard deviation of 8,172. The lowest score is 70, but the highest one is 100. The average score is 84,33 with the range of 30. In the following, the distribution of learning achievement in cycle II is presented

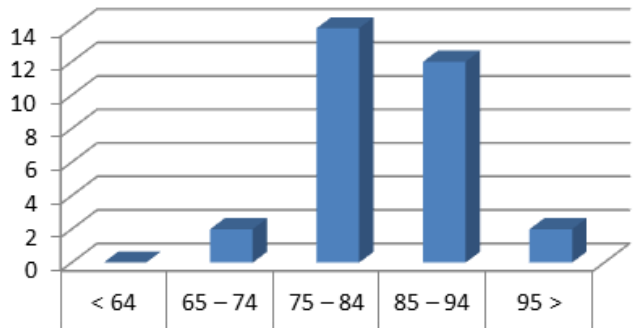
Table 9. The Distribution of Learning Achievement in Cycle II

Category	Range	Frequency	Percentage	Description
Very high	95 >	2	6,67 %	
High	85 – 94	12	40 %	Pass
Moderate	75 – 84	14	46,67 %	
Low	65 – 74	2	6,67%	Remedy
Very low	< 64	0	0	
Total		30	100 %	

Table 9 describes the learning achievement in cycle II. 30 students shows the distribution as in the following: 28 students (93,33 %) pass KKM, 2 students (6,67%) have no reached the standard of KKM. Meanwhile, the score distribution is as follow: 2 students are in the score range of 95-100 in the very high category; 12 students possess their scores in the range of 85-94 in the high category; 14 students are in the score range of 75-84 in the moderate category; 2 students are in the score range of 65-74 in the low category; and no students are in the range of 0-64 in the very low category. Based on the distribution of learning achievement in the cycle II, the learning achievement can be best described in the following diagram.

The Diagram of Distribution of Learning Achievement in Cycle II

Cycle 2



The diagram describes learning achievement of 30 students in cycle II: none of them are in the score range of 0-64; 2 students are in the score range of 65-74; 14 students are in the score range of 75-84; 12 students are in the score range of 85-94; and 2 students are in the score range of 95-100.

Inter-cycle grading

Pre-cycles and cycle 1

Table 10. The Description of Learning Achievement of Pre-cycles and Cycle 1

	Pre-cycles		**Cycle 1**	
	Total	Percentage	Total	Percentage
Pass	3	10 %	9	30 %
Remedy	27	90 %	21	70 %
Total	30	100 %	30	100 %
Average	51,90		59,467	

Table 10 displays learning achievement from pre-cycles and cycle 1, and there is improvement from the average of pre-cycle of 51,90 into 59,467. In the cycle 1, the discrepancy is 7,567. The percentage of learning completeness during pre-cycle is that 3 students (10 %) have passed KKM of 75, and the percentage of learning completeness during cycle 1 is that 9 students (30 %) have achieved 75 as the targeted KKM. Simply put, the improvement of learning completeness has reached 20 %.

Cycle 1 and cycle 2

Table 11. The Statistic Description of Learning Achievement in Cycle 1 and Cycle 2

	Cycle 1		Cycle 2	
	Total	Percentage	Total	Percentage
Pass	9	30 %	28	93,33 %
Remedy	21	70 %	2	6,67 %
Total	30	100 %	30	100%
Average	59,467		84,33	

From table 11, there is improvement of learning achievement from cycle 1 to cycle 2. The average point improvement is 24,863 derived from 59,467 in cycle 1 into 84,33 in cycle 2. The percentage of learning completeness in cycle I demonstrates that 9 students (30 %) have passed KKM of 75. Whereas, the percentage of learning completeness in cycle 2 displays that 28 students (93,33 %) have reached 75 as the standard of KKM. In sum, the percentage improvement of learning completeness is 63,33 %.

Conclusion

Based on analysis and discussion, the researcher concludes that there is no improvement of the use of task module toward learning achievement of Mathematics for students of grade XII TPHP D SMK Negeri (Public Vocational High School) I Bawen at even semester on the academic year of 2017/2018. The condition of students that are lazy and difficult to manage affects the ineffectiveness of the use of task module. The teacher has to repetitively remind the students to keep up working on the module. Big number of students often directly works on the exercise without reading the material at the first place. Thus, they have to raise more questions while the teacher is moving around the class. The students remain depending on teacher presentation and guidance to comprehend the materials, and they feel the comfort listening to the materials. Such circumstance indicates that students have not been able to work independently and less take responsibility. In this sense, the teacher seems unaware with the case, so it is not prepared for anticipation.

Bibliography

Ayriza, Y. (2008). Developing And Validating The Social Life Skill Module For Pre-School Educators. *Jurnal Penelitian dan Evaluasi Pendidikan.* 12 (2). 213-231.

Anita, L. (2002). *Cooperative Learning: Mempraktikkan Cooperative Learning di Ruang-ruang kelas*. Jakarta: Gramedia Widiasarana.

Arikunto, S. (1986). *Dasar-dasar Evaluasi Pendidikan*. Yogyakarta: Bukti Aksara.

Budiyono, E. & Susanto, H. (2006). Penyusunan Dan Penggunaan Modul Pembelajaran Berdasar Kurikulum Berbasis Kompetensi Sub Pokok Bahasan Analisa Kuantitatif Untuk Soal-Soal Dinamika Sederhana Pada Kelas X Semester I SMA. *Journal Pendidikan Fisika Indonesia.* 4 (2). 79-87.

Dahar, R., W. (2006). *Teori-teori Belajar dan Pembelajaran*. Bandung: Erlangga.

Djamarah, Syaiful B. & Aswan, Z. (2010). *Strategi Belajar Mengajar*. Jakarta: Rineka Cipta.

Hasratuddin. (2013). Membangun Karakter Melalui Pembelajaran Matematika. *Paradikma; Jurnal Pendidikan Matematika.* 6 (2). 130-141.

Huberman, A. M. & Matthew B. M. (2009). *Analisis data Kualitatif; Buku Sumbertentang Metode-metode Baru*. Terj, Tjejep Rohendi Rohidi. Jakarta: Universitas Indonesia Press.

Nasution. (1982). *Berbagai Pendekatan Dalam Proses Belajar & Mengajar*. Bandung: Bumi Aksara.

Novitasari, Dian. (2016). Pengaruh Penggunaan Multimedia Interaktif Terhadap Kemampuan Pemahaman Konsep Matematis Siswa. *Fibonacci; Jurnal Pendidikan Matematika & Matematika.* 2 (2). 8-18.

Prastowo, Andi. (2011). *Panduan Keratif Membuat Bahan Ajar Inovatif*. Yogyakarta: Diva Press.

Wena, Made. (2008). *Strategi Pembelajaran Inovatif Kontemporer: Suatu Tinjauan Konseptual Operasional.* Malang: Bumi Aksara.

Widayati, Ani. (2008). Penelitian Tindakan Kelas. *Jurnal Pendidikan Akutansi Indonesia.* 6 (1). 87-93.