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Developing Mathematics Instructional Package with POGIL that is Oriented to The Competences in Curriculum 2013

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***Abstract*—**The purpose of this research was to produce instructional package in 7th grade on the 2nd semester with POGIL that consisted of lesson plans and student worksheets, which hadgood quality. The quality was determined based on Nieveen criteria, including validity, practicality, and effectiveness. This study was a development research. The developing model in this research was Plomp model, which consisted of preliminary research, development, and assessment phase. The research instruments were validation sheets, teacher assessment sheets, observation sheets for learning process, student assessment questionnaires, tests, questionnaires, and observation sheets for attitudes. The analysis of the validity and practicality of the data was done by converting the quantitative data in the form of assessment result score into the qualitative data in the form of five scale. The analysis of the effectiveness of the test results was conducted by determining the percentage of the students' learning mastery. The assessment of questionnaires and attitudes observation was conducted by determining the percentage of the students for each category. The result of the validation showed that the developed instructional package was very valid based on the lesson plans and student worksheets. The results of the tryout indicated that lesson plans and student worksheets were practical and effective. The instructional packagewas in the very practical category based on teacher's assessment and practical category based on the result of observation for learning process and students' assessment. The instructional package was also in the effective category based on students' learning mastery, questionnaires of religiosity, and questionnaires of attitudes.

Keywords: *competences in Curriculum 2013, development, instructional package, POGIL*

I. INTRODUCTION

The Curriculum 2013 is the newest curriculum in Indonesia which is publised as the recondition of Curriculum 2006. Through Curriculum 2013, the character and competences-based curriculum, Indonesian nationareexpected to become the dignified nation and its people have high competitivenesswith other people and nations in the world [1]. Mathematics learning process in Curriculum 2013 is focused on four competences. Those are religiosity, attitudes, knowledge, and skills.

One of the fundamental things that students can be successful in many areas of higher mathematics is to have automaticity in terms mathematical factual knowledge. Without the ability to retrieve facts directly or automatically, students are likely to experience a high cognitive load as they perform a range of complex tasks [2]. Thus, the factual knowledge becomes the basic knowledge that must be mastered by students in mathematics.

Moreover, several studies have documented that many students are having difficulty in understanding and applying concepts, finding relevance, trasferring skills within and across diciplines, and identifiying and developing the skills they need for success in specific courses [3]. One of the basic mathematical skills that must be possessed by the studentsisproblem solving skills [4].Unfortunately, research shows that students' ability to solve problems is far below their abilities to calculate [5].Mathematics learning

process in the classroom do not give opportunities to students for investigating, reasoning, or deciding on the solution process and do not improve problem solving skills [6].

That condition causes a lot of junior high school students have not good achievement in mathematical knowledge and skills. This phenomenon can be seen from many students in 7th grade of SMP N 1 Yogyakarta still getmathematics learning mastery <75 in mid semester test, as shown in Table 1.

TABLE 1. MATHEMATICS LEARNING MASTERY THE 7TH GRADE STUDENTS OF SMP N 1 YOGYAKARTA IN MID SEMESTER TESTACADEMIC YEAR 2014/2015

Class	Percentage of mathematics learning mastery < 75	Percentage of mathematics learning mastery more than ≥ 75
VII A	65%	35%
VII B	37%	63%
VII C	66%	44%
VII D	83%	17%
VII E	77%	23%
VII F	66%	34%
VII G	74%	26%
VII H	32%	68%

Based on Table 1, there are still many students who have not yet achievedmathematics learning mastery≥ 75. It is required animprovement efforts in mathematics learning processto optimize the students' achievement in mathematical knowledge and skills.

Several studiesalso have documented that learning in schools only generates students with a lot of knowledge, yet they are lack of attitudes and skills. Many cases such as corruptions and anarchic actions show that Indonesiasociety isnot consistent with the religous and Pancasila values [7]. The research from [8] and [9] state that religiosity has an important role in the system of education and learning process. Thus, religiosity is an important part of the educational system in a country. Religiosity should not only developed through a religious education subjects, but also require the support of other subjects, including mathematics.

Some attitudes also need to be developed in mathematics learning process. Some attitudes that can be developed in mathematics learning process are confidence, curiosity, and responsibility. The research from [10] concludes that students with high academic achievement show higher level of self confidence than lower academic achiever students. The other research from [11] states that students with greater curiosity in more challenging schools have the greatest academic success. Otherwise, students with greatercuriosity in less challenging schools have the least academic success.

In Curriculum 2013, students should have the four competences in mathematics learning which uses scientific approach with implementation of inquiry learning [12].Unfortunately, many mathematics teachers are not yet able to implement the inquiry-based learning strategies which are appropriate with Curriculum 2013.The strategy which is frequently used by the teachers in mathematics learning process is expository or conventional learning.In addition, the teachers just focus on the students' cognitive domain during the process of learning mathematics.

By interviewingwith mathematics teachersin SMP N 1 Yogyakarta, Mrs. Sri Utami and Mr. Agus Margono on September, 8, 2014 state that the mathematics learning strategy which is frequently used in the class is expository or conventional learning which are focused on the development of students' cognitive domain. Mathematics teachers in SMP N 1 Yogyakarta are not yet able to implement the inquiry-based learning strategies which are appropriate with Curriculum 2013.

One of the learning strategies which are based on inquiry is Process-Oriented Guided Inquiry Learning (POGIL). It can be implemented in mathematics class as an alternative way to develop students' competences in Curriculum 2013. In a POGIL classroom, students work in a teamusing formal roles. The learning team constructs knowledge by working in a group with inquiry activities that has been specially designed in student worksheets [13]. These activities can improve the students' knowledge level by focusing on concept of development. Besides, the students can also apply their knowledge in new contexts. Moreover, the students learn to rely on thinking and performing skills rather than memorizing, and also developing positive relationships with other students [3].

The student worksheets in a POGIL classroom follow the learning cycle model which contains three parts i.e.: exploration, concept invention, and application [13]. Moreover, [13] explains that quiz becomes an important thing in POGIL class. Every period (except the first class period and the period after each hour exam) begins with a three-minute quiz. The purpose of the quiz is to give the teachers some immediate feedbacks about how well the concept is learned by the students, to reinforce the concept in the students' mind and to encourage the students to do the homework before the quiz is given.

Many POGIL classrooms employ formal roles. The roles are frequently rotated in every class meeting, so that every student experiences each role and responsibility. According to [3] and [13], the following are the most commonly used roles: 1) the manager;he/she actively participates, keeps the team focused on the task, distributes work and responsibilities, resolves disputes, and assures that all members participate and understand, 2) the spokesperson (presenter); he/she actively participates and presents reports and discussion result to the class, 3) the recorder; he/she actively participates, keeps a record of the assignment and what the team has done, and prepares a report in consultation with the others, 4) the strategy analyst (reflector); he/she actively participates, identifies strategies and methods for problem solving, observes and comments on group dynamics and behavior with respect of the learning process.

Furthermore, [3]explains that in a POGIL classroom, a teacher is not an expert that solely provides knowledge, but rather as a guide for students in the process of learning, developing skills, and their own understanding. The teacher role in POGIL classroom is as a facilitator who moves around the room observing every student group work. As a facilitator, teacher should observe and determine whether the problem is likely to be solved without intervention [13].

Thechallenge for teachers is to implement the inquiry-based learning strategies inmathematics learning process which are appropriate with Curriculum 2013. Because the implementation of Curriculum 2013 is a new things, the mathematics instructional package which are appropriate with Curriculum 2013 is still very limited. Interviewing with Mrs. Sri Utami and Mr. Agus Margono state that developing mathematics instructional package with POGIL that is oriented to the students' competences in Curriculum 2013 for 7th grade students on the 2nd semester has not been done by the teachers in SMP N 1 Yogyakarta. Therefore, it is necessary an effort to develop mathematics instructional package that enables students to actively construct mathematicalknowledge and skills through group interaction, has religious value and good attitudes.

Based on the background above, the formulation of the problem in this research is how the quality of mathematics instructional package with POGIL that is oriented to the students' competences in Curriculum 2013 for 7th grade students on the 2nd semester? Therefore, this research aims to produce and descibe mathematics instructional package with POGIL that is oriented to the students' competences in Curriculum 2013 for 7th grade students on the 2nd semester, consists of lesson plans and student worksheets which has validity, practicality, and effectiveness criteria [14]. Moreover, the benefits of this research are the teachers can use the mathematics instructional packagefor learning process in a classor in other school, help students to develop religiosity, attitudes, mathematical knowledge and skills, and repair and improve the quality of mathematics learning in school.

II. RESEARCH METHOD

A. Design of The Research

This research was development research. The developing model in this research was Plomp model which consisted of preliminary research, development, and assessment phase [15]. The product of this research was mathematics instructional package with POGIL for 7th grade on the 2nd semester which consisted of lesson plans and student worksheets.

B. Procedure of The Research

The identification and study aboutstudents'condition, mathematics learning processwhich took place in SMP N 1 Yogyakarta, Curriculum 2013, competences to be achieved by students, and the 7th grade mathematics materials on 2nd semester were conducted in the preliminary research phase. Furthermore, the preparation and design of the lesson plans and student worksheets were conductedin the development phase.The result fom this phase wasthe 1st draft of mathematics instructional package with POGIL. The

formative assessment by experts was also conducted in this phase. Itaims to determine whether the 1st draft of mathematics instructional package whichhas been developed valid or not based on expert judgments. Then, tryoutabout mathematics instructional packagewhich has been valid based on expert judgments with the aims to test the practicality and effectiveness was conducted in the assessment phase.

C. Subject Tryout, Time, and Place of The Research

Tryout in this researchwas included the 1st and 2ndtryout. The 1sttryoutwas conducted only limited to a few students on Saturday, February 28, 2015 and aimed to obtain feedback from students as consideration for fixing LKS before it is implemented on learning in the classroom. Subject of the 1sttryoutwas nine students of class VII C SMP N 1 Yogyakarta, consists of three high-ability students, three middle-ability students, and three low-ability students. While the 2nd tryout was conducted on a class by implementing the instructional packagewhich was developed in mathematics learning process to determine the practicality and effectiveness of the instructional package. Subject of the 2nd tryout was students of class VII B SMP N 1 Yogyakarta, consists of 35 students. The implementation of instructional package which was developed in mathematics learning process was done as much as 8 times, 7 meetings for learning and 1 meeting to test and fill the questionnaires. The 1st meeting was began on Tuesday, March 17, 2015 and the 8th meeting was ended on Saturday, April 25, 2015.

D. Instrument, Data Collection andData Analysis Technique

The data in this researchwas data validation expert, teacher assessment, observation for learning process, student assessment, tests, questionnares, and observation for attitudes. The qualitative data was obtained from comments and suggestions on the development of instructional package. The quantitative data was obtained from the filling data collection instrument by giving the check mark (√) in the selection of an appropriate response.

Data collection techniques in this research was done by giving validation sheets, teacher assessment sheets, student assessment questionnaires,tests,questionnaires, and classroom observation through observation sheetsfor attitudesand observation sheets for learning process. Data collection instruments consist of validation sheets to measure the validity of instructional package, teacher assessment sheets, observation sheets for learning process, and student assessment questionnairesto measure the practicality of instructional package, then tests, questionnaires and observation sheetsfor attitudes to measure the effectiveness of instructional package.

Data analysis techniques used in this research: qualitative data in the form of comments and suggestions were analyzed qualitatively, then used as input for revising the products developed; quantitative data with a five-point scale is converted into qualitative data, with reference to the formula which was adapted from [16] in Table 2.

TABLE 2. DATA CONVERSION CRITERIA

Grade	Score Interval	Category
A	$X > \bar{x}_i + 1{,}5SBi$	Very good
B	$\bar{x}_i + 0{,}5SBi < X \leq \bar{x}_i + 1{,}5SBi$	Good
C	$\bar{x}_i - 0{,}5SBi < X \leq \bar{x}_i + 0{,}5SBi$	Pretty good
D	$\bar{x}_i - 1{,}5SBi < X \leq \bar{x}_i - 0{,}5SBi$	Not quite good
E	$X \leq \bar{x}_i - 1{,}5SBi$	Not good

Information:

$\bar{x}_i$ = mean ideal score = $\frac{1}{2}$ (ideal maximum score + ideal minimum score)

SBi = ideal standard deviation = $\frac{1}{6}$ (ideal maximum score–ideal minimum score)

X = total actual score

The instructional packagewas said to be valid if the validity which achieved minimum in the category valid. It was said to be practical based on teacher assessment if the practicality which achieved minimum in the practical category, based on the observation for learning process if the percentage of learning process reached at least 80%, and based on student assessment if the practicality which achieved minimum in the practical category. Moreover, it was also said to be effective if the results of the test on knowledge at least 80% of students in the class reached mathematics learning mastery ≥ 75, so did the test on skills.Also the results of questionnaires for religiosity at least 80% of students in the class reached a minimum height categories, and so did the questionnares for attitudes.

III. RESULT AND DISCUSSION

A. Result of The Research

The identification and study about the condition of the students wasconducted in the premilinary research phase. The results indicate that there were still many students of class VII SMP N 1 Yogyakarta getmathematics learning mastery < 75 in mid semester test as presented in Table 1. Thus, it was necessary an effortsto improve learning activities so that the achievement of students in mathematics learning mastery could more optimal. Implementation of POGIL in mathematics learning process could be used as an alternative way to provide meaningful learning experiences for students. It was hoped can optimize students' mathematics learning mastery related to knowledge and skills. In addition, students could also develop positive relationships with other students because in POGIL classstudentslearn actively through group interaction. This waspotentialto develop religiosity and attitudes of the students.

The identification and study about mathematics learning process in SMP N 1 Yogyakartawas also conducted in the premilinary research phase. Interviewingwith two mathematics teachersin SMP N 1 Yogyakartastate that the mathematics learning strategy which was frequently used in the class is expository or conventional learning which were focused on the development of students' cognitive domain. Mathematics teachers in SMP N 1 Yogyakarta were not yet able to implement the inquiry-based learning strategies which are appropriate with Curriculum 2013, that was POGIL. Moreover, the mathematics instructional package which were appropriate with Curriculum 2013 wasnot yet developed by the teachers in SMP N 1 Yogyakarta. So, developing mathematics instructional package which consistedof lesson plans and student worksheets with POGIL wasan alternative way for teachers to perform mathematical learning process which were appropriate with Curriculum 2013 easily.

Furhermore, the identification and study about Curriculum 2013 and competences to be achieved by studentswere also conductedin the premilinary research phase. The curriculum used in this research wasCurriculum 2013 which focused on four competences which consistsed of religiosity, attitudes, knowledge, and skills. The four competences that must be mastered by learners are need to be declared in such a way can be assessed as students' learning outcomes. Those become a reference from basic competences and should be developed in mathematics learning process. Then, based on the four competences and basic competencescould be developed indicators to determine the achievement of competences in this research.

The last in the preliminary research phase wasthe identification and study about mathematics materials on 7th grade on 2nd semester. Itwas conducted to identify, specify, and systematically compile the materials developed and tested in this research. The materials were consisted of rectangles and triangles, linear equality and inequalities in one variable and social arithmetic, transformation, and probability and statistics.

The next phase was development phase. In this phase, lesson plans and student worksheets weredesigned.Then, the experts conducted formative assessment to determine whether the 1st draft of mathematics instructional packagewhich have been developed valid or not. Lesson plans weredesigned and developed based on POGIL steps. Besides, the student worksheetswerealso designed and developed appropriate with characteristics of POGIL.

Lesson plans were developed based on Permendikbud Nomor 65 Tahun 2013 about standard process which explained the components that must be presented in the lesson plans. Those were school's identity,

subjects' identity, grade/semester, subject matter, allocation of time, learning purpose, basic competences and indicator achievement of competences, learning materials, teaching methods, instructional media, learning resources, learning steps, and assessment of learning outcomes.Four lesson planswere prepared in the first draft. Lesson plans 1 were designed about rectangles and triangles for 10 meetings. Lesson plans 2 were designed about linear equality and inequalitiesin one variable and social arithmetic for 7 meetings. Lesson plans 3 were designed about transformation for 5 meetings. The last, lesson plans 4were designed about probability and statistics for 5 meetings too.

Four student worksheets were also developed in the first draft. Student worksheets 1 were designed about rectangles and triangles. Student worksheets 2 were designed about linear equality and inequalitiesin one variable and social arithmetic. Student worksheets 3 were designed about transformation. Student worksheets 4were designed about probability and statistics.

Each student worksheets was containedthe following elements: a description of the contents of student worksheets, useful to give an overview to the students about the material in student worksheets; instruction to use the student worksheets, useful to provide information on how to learn student worksheets; basic competences which to be achieved by students; concept maps; table of contents, useful to facilitate students in their search for the material to be learned; learning activities which consisted oflearning purpose, information, critical thinking questions, exercises, and assignments. The information contained little information about the material studied. Critical thinking questions aimed to help students found facts, concepts, principles, and procedures mathematics about the materials. The exercise useful to provide opportunities for students to apply what they found and apply what was found in the new situation, and also assignment contained homework for students.

The formative assessment was conducted by experts to see the contents of the 1st draft before it tested. Validation was done by providing the instructional package and validation sheetsfor two lecturer of Mathematics Education, in Yogyakarta State University and one mathematics teacher in SMP N 1 Yogyakarta. Based on the results of validation could be known the valid criteria for lesson plans and student worksheets. Table 3 below presented the formative assessment by experts to instructional package.

TABLE 3. VALIDATION RESULTS OF INSTRUCTIONAL PACKAGE

Instructional Package	Total Empiric Score	Category
Lesson Plans	366	Very valid
Student Worksheets	295	Very valid
Total	661	Very valid

Table 3 stated that each instructional packagewas in "very valid" category. It means that the initial product of instructional package has already usedin tryoutafter revision based on the suggestion from the experts.

The last phase was assessment phase. Tryout about mathematics instructional package was conducted in this phase. Tryout consisted of the 1st and 2nd tryout. The 1sttryout wasconducted only limited to a few students. While the 2nd tryout was conducted on a class by implementing the instructional package developed in mathematics learning.

Ideally, all mathematics instructional packagewhich have been developed must be tested. However, tryoutin this research did not test the entire instructional packageof class VII on 2nd semester which has been developed in the development phase, but only in the material aboutlinear equality and inequalitiesin one variable and social arithmetic. It was done because of limited time, cost, and energy. Nevertheless, it was believed that the entire mathematics instructional packagewhich has developed have similar results with mathematics instructional package which has been tested.

Student assessment as a results of the 1sttryout indicated that the display of student worksheets was attractive; the characters of text, images, and background on student worksheetswere suitable; the instructions to use student worksheets were clear; the language in student worksheets could understandeasily; the place to write answers on student worksheetswas sufficient; and the number of exercises on the worksheet was sufficient. However, there were some suggestions from students before it used inthe 2nd tryout.

The result of the 2nd tryout indicated that the instructional package was "very practical" based on teacher assessment. Data from teacher assessment about instructional package could be seen in Table 4.

TABLE 4. RESULT OF TEACHER ASSESSMENT

Instructional Package	Score	Category
Lesson Plans	59	Practical
Student Worksheets	70	Very practical
Total	129	Very practical

Then, the percentage of implementation learning processwas 96% and the percentage of implementation POGIL was 97%. This means that the instructional package could be said to be "practical" based on the observation for learning process. Moreover, mathematics learningprocess by using student worksheets developed could be said to be "practical" based on the student assessment. Data result of student assessment could be seen in Table 5.

TABLE 5. RESULTOF TEACHER ASSESSMENT

Rated Aspect	Score	Category
Attractiveness	827	Practical
Easiness	791	Practical
Usefulness	390	Practical
Total	2008	Practical

Classically, learning mastery for knowledge reached 80% and for skills reached 83% based on the resultof the tests. Moreover, the result of questionnaires for religiosity showed that 100% students were in the very high category. Then, the result of questionnaires for attitudes showed that 31% students were in the very high category and 69% students were in the high category.So, it couldbe concluded that the lesson plans and student worksheets were "effective" based on the result of tests and questionnaires.

B. Discussion

The planning process was required to facilitate the achievement of mathematics learning objectives in learning. It was the preparation of instructional package consists of lesson plans and student worksheets.The instructional package would facilitate the teacher to implement mathematics learning process.

Curriculum 2013 focused on four competences. Those were religiosity, attitudes, knowledge, and skills. Students should have those four competences in mathematics learning which used scientific approach with implementation of inquirylearning. One of the learning strategies which were based on inquiry learning and suitable with Curriculum 2013 is POGIL. It could be implemented in mathematics learning to develop the competences of students. In a POGIL classroom, students worked in a team. The learning team constructed knowledge by working in a group with inquiry activities that has been specially designed in student worksheet. These activities could improve the students' knowledge level by focusing on concept of development. Besides, the students could also apply their knowledge in new contexts. Moreover, the students learned to rely on thinking and performing skills rather than memorizing, and also developing positive relationships with other students.

Therefore, it was neccessary to develop mathematics instructional package with POGIL to 7th grade on the 2nd semester that was oriented to the students'competences in Curriculum 2013. The mathematics instructional package developed consisted of lesson plans and student worksheets in material about rectangles and triangles, linear equality and inequalities in one variable and social arithmetic, transformation, and probability and statistics. While it was implemented in mathematics learning process only on material about linear equality and inequalities in one variable and social arithmetic.

The learning activities in the lesson plansconsisted of introduction, main activity, and closing. In introduction the teacher explained about the learning purpose,motivated the students to study the material, and gave prerequisite material to help student studying the related material apperception. Main activity was an activity that contained POGIL steps including organized the student into some groups consists of

4-5 students, explore, discover, apply what they have discovered, apply what they have discovered in new situations, presented the discussion result, and held a quiz. In the closing activitythe teacher asked the students to conclude the material which have been learned in that day, made a reflection to the learning process, gavehomework to the students and told the next materials that will be studied in the next meeting.

The student worksheets with POGIL designed contains learning cycle. The learning cycle was consisted of three important phases. Those were exploration, invention, and application. Exploration phase in student worksheet could be represented by a few of information about the materials.I n the invention phase, critical thinking questions were given to the students. Those questions guided the students to discover some facts, concepts, principles, and mathematics procedures. There were three kinds of critical thinking question which can be used. Those were directed, convergent, and divergent questions. Directed questions point the student to obviously discovered about the information. Convergent questions required students to synthesize relationships from their new discoveries (and previous knowledge) and lead to the development of new concepts or deeper conceptual understanding. Divergent questions were open ended and did not have unique answers (Hanson, 2006).In the application phase, the students woulddo some exercises to apply what they have discovered and new contextual problems.

Furthermore, based on the validation results could be known that the instructional packagedeveloped has achieved "very valid" category. It could be known from the results of the validation lesson plans and student worksheets. Based on the validation results could be concluded that the lesson plans were "very valid" and so did the student worksheets. That description showed that the instructional package developed was already use for tryout.

Moreover, based on the results of tryout in the classroom could be known that the lesson plans and student worksheets developed have achieved "practical" category. It could be known from the results of teacher assessment, observation for learning process, and student assessment. Based on the results of teacher assessment about the lesson plans and student worksheets after learning in the classroom could be concluded that the lesson plans and student worksheets were "very practical". Based on observation for learning process could be concluded that the lesson plans and student worksheetswere "practical" with the percentage of implementation learning processwas 96% and the percentage of implementation POGILwas 97%. Based on the results of student assessment could be concluded that the student worksheetswere "practical". That description showed that the lesson plans and student worksheets developed, POGIL learning activities couldbe done well.

Then, based on the results of tryout in the classroom could be known that the instructional package developedhasachieved "effective" category. It could be known from the results of tests, questionnaires of religiosity, and questionnaires of attitudes. Based on the tests results could be concluded that the instructional package was “effective”. Classically, learning mastery for knowledge reached 80% and for skills reached 83% based on the resultof the tests. Moreover, the result of questionnaires for religiosity shows that 100% students were in the very high category. Then, the result of questionnaires for attitudes shows that 31% students were in the very high category and 69% students were in the high category.That description showed that the instructional package developed could be an alternative way for supporting the achievement of the 7th grade junior high school students’competences in Curriculum 2013.

The result of this research supportedthe previous research that has been conducted by other researchers. The research from [17] stated that the students problem solving ability taught using POGILwas better than the students problem solving ability taught using expository in circumference and area of circle material. The other research from [18] stated that students’ mathematics achievement, process skill, and students’ activity passed through the minimal criteria by individually or classically in mathematics learning process by using POGIL in differential material. Moreover, the other research from [19] stated that the mathematical communication skill passed through the minimal criteria by classically has been implemented POGIL using manipulatives and based on etnomathematics. Besides, the students’ attitude towards culture was better than before. On the other hand, the result of this research also supported other development research from [20] stated that the pythagoras theorem instructional package

such as syllabi, lesson plans and student worksheets with ideal approach assisted GeoGebra was valid, practical, and effective through 4-D developing model from Thiagarajan, Semmel, & Semmel.

Based on the description above, it could be concluded that the mathematics instructional package with POGIL that wasoriented to the 7thgrade junior high school students' competences in Curriculum 2013 on the 2nd semester has been proven validity, practicality, and effectiveness. Thus, the mathematics instructional package was consisted of lesson plans and student worksheets could use in the learning activity.

IV. CONCLUSION AND SUGGESTION

Based on the result of the research and discussion above, it can be concluded that the quality of mathematics instructional package with POGIL that was oriented to the 7th grade junior high school students' competences in Curriculum 2013 on the 2nd semester was valid, practical, and effective.

Some suggestion to the mathematics teachers, they can use mathematics instructional package with POGIL which has been developed in mathematics learning process because it has been valid, practical, and effective. It also can be used as a reference forthemto compile mathematics instructional package that is used to develop students' competences in the class. Futher suggestion for the researchers who are interested in development research can be develop mathematics instructional package in other materials, other attitudes variables, or for other grade levels.

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