

Effectiveness of EXO OLO TASK Learning Model Based on Lesson Study in Geography Learning

N Nofrion*, A Ananda, S Anwar, H Hasan and I Furqon

Universitas Negeri Padang, Padang, Indonesia

*dion_geografi@yahoo.com

Abstract. The aims of this paper is to describe the effectiveness implementation EXO OLO TASK Learning Model in geography learning viewed from: 1) student's learning activity included individual activity, paired activity and group/classical activity, and 2) students learning outcome. This research method is quasi-experiment. Population in this research is student grade X SMAN 3 Padang with sample is grade X IS2 student as experiment class and grade X IS 4 class as control class. Sampling technic of this research is cluster random sampling. Data from learning activity collected by learning observation sheet and processed by percentage technic. While learning outcome data taken from student's daily task value. Result of this research shows that students who show's learning activity in level 3 increase after four times learning process. While for learning outcome, data distributed normally with sig. value 0,807 for experiment class and 0,5188 for control class. Data also comes from same variant that proved from sig. value 0,107. T test result prove that there is different between learning outcome from experiment class with control class with sig. value 0,000 whit α 0,05.

1. Introduction

Learning practice as implementation of the 2013 Curriculum in Indonesia have been planned to develop 21 century skills. Through Ministry of Education Regulation Number 103 year 2015 which explain eight learning characteristic 21 century who's accommodate development of global education which known as 4K [1]: 1) Critical Thinking and Problem Solving Skills, 2) Communication Skills, 3) Creativity and Innovation and 4) Collaboration [2]. After that, in Ministry of Education Regulation Number 22 Year 2016 about Learning Process Standard for Secondary School explain 14 principles of learning in the 2013 Curriculum.

Likewise with Geography lessons. Geography lessons include a subject group of social sciences in the curriculum structure of high school in Indonesia [3]. Based on Ministry of Education Regulation Number 22 on Standard Process of Primary and Secondary Education explained that the learning process in educational unit is organized Interactive, inspirational, fun, challenging, motivate learners to participate actively, and provide adequate space for initiative, creativity, and independence in accordance with the talents, interests, and development of physical and psychological learners [4]. With such learning is expected to achieve learning objectives Geography that is characterized by the development of environmental awareness and fostering the love of the homeland as well as strengthen the understanding of learners of the importance of the role of geography subjects as a science that studies the variation of space, how and why something is different from a place with other places on the earth surface. More than just science that discusses where things are located [5].



However, the reality in the field shows that there are still many problems in the learning of geography. As revealed in the observation of learning that researchers do in 10 high schools in West Sumatra. These problems are, 1) Learning activities in learning is still in the corridor of basic activities (listening, Asking and responding), 2) Teachers are accustomed to planning, implementation to assessment by them self. So that collaboration and mutual filling does not occur between teachers. Teachers do not have a source of improvement on the quality of learning, 3) Tasks/questions that students do are very exam-oriented/curriculum so that only sharpening the ability of low and middle thinking skills. As a result, learners can easily do tasks/questions and other students are also easy to get the same answer. So that in-depth understanding of learners difficult to be realized (high level thinking), 4) Interaction learners with learners as in group work has not been oriented to the development of high-level thinking ability. Often group activities are only to summarize the material or do the questions/tasks that can actually be done independently by the learners, 5) Educators often use the questions/tasks taken from other sources/already available such as from the LKS and teachers have not mastered the problem/The task well.

If this condition is ignored it will threaten the achievement of learning objectives and national education objectives in general. To anticipate this, the authors conducted an experimental study through the implementation of Learning Model EXO OLO TASK Based Lesson Study on Geography Learning. With the implementation of this learning model is expected to create an interactive learning atmosphere, inspirational, fun, challenging and collaborative. It is also useful to develop the skills of the 21st century among learners and develop the competence of the teacher. The positive side of this learning model is to improve the effectiveness and quality of learning from both sides of the educator and learners. From the students side in the form of increased learning activities both individual activities, Activity in pairs or activity group/classical. While from the educator side, will improve the mastery of material and class management. Both of these are expected to have a positive effect on learning outcomes.

2. Literature Review

2.1. EXO OLO TASK learning model

EXO OLO TASK learning model is a learning model that focuses on organizing the learning activities of learners effectively and gradually, develop collaboration and improve teacher competence in terms of mastery of materials and classroom management. This model includes clumps of social and developed based on the theory of learning constructivist social Vygotsky and cognitive Piaget, the principles of collaborative learning and its implementation based lesson study and a life philosophy of Minangkabau society that reads "*duduak surang basampik -sampil, duduak Basamo balapang-lapang*" which means a job if done alone would droop/cramped. However, if done together/collaborate the work will become lighter. The lesson study expert from Japan, Manabu Sato said that "children's learning achievement is important, but the child's comfort in learning is far more important". That is, learning in addition to results-oriented should also be process-oriented. EXO OLO TASK learning model is also aligned with the development of education and 21 century skills known as 4K, KDP and GLN and support the implementation of the 2013 curriculum. The steps of the EXO OLO TASK learning model that researchers develop are (see in table 1):

Table 1. EXO OLO TASK learning syntax.

No	Syntax/Learning Steps	Description of Learning Activity
1	<i>REINFORCEMENT /CONCEPT NOURISMENT</i>	Nourishing the concept. At this stage, educators reinforce concepts learned through the "power of keywords" technique. As well as a ladder or "scaffolding" for learners. Carried out in the form of individual activities.
2	<i>EXO TASK</i>	Assignment of tasks or questions in the category of "examination oriented" (tasks or problems in accordance with the demands of the curriculum/exam). Educators adjust to the level of achievement in indicators and learning objectives. If the indicator of learning achievement is C3, then the variation of task or problem that is designed by educator is from C1 to C3. Educators organize learning activities in the work of this task/problem in pairs. Educators prepare a package of tasks/questions that will be done learners with a customized duration.
3	<i>DISCUSSION</i>	Problem/task discussion. Educators must ensure that all learners are able to complete the task/question correctly. The answer or explanation of the educator is the final step in the session.
4	<i>OLO TASK</i>	Giving tasks/questions above the demands of the curriculum or "Olympiad oriented" or task/question category "High Order Thinking". The assignment or question of this category is presented per number and done in groups of four and heterogeneous members. Associated with the level of questions, if the indicators and learning objectives stated C3 then the task/problem in the category OLOTASK starting from C4-C6. However, educators may start with C3 as a warming task or as a bridge for learners before facing difficult and challenging tasks.
5	<i>DEPTH DISCUSSION</i>	In-depth discussion of tasks or problems given are done in groups.
6	<i>REFLECTION</i>	Educators and learners take meaning and wisdom from learning activities that have been undertaken together. This reflection is important for educators and learners.

The development of learning/syntax measures in the EXO OLO TASK learning model is inspired by the learning atmosphere in Japan where educators often provide high-level questions or what are called "jumping" questions. While low-level questions are called "sharing" problems, this practice is practiced by Japanese teachers not in the form of a learning model or in the word sense only becomes a learning technique only. This is what distinguishes it with the EXO OLO TASK model that the researcher develops. The development of this model is important because it becomes a component of education providers in addition to standards and Assessment, curriculum, professional development and learning environment [6].

2.2. Paradigm of geography education

Geography Education is part of Geography. In other terms known as 'geography as a science, geography as education or learning and geography as an attitude'. In Geography for Life: National Geography Standards, 2nd Edition explained that the goal of geography learning is "to equip students with the knowledge, skills, and perspectives to 'do' geography" [7]. There are three main pillars of geography learning: 1) Geography content/theme/essential that is related to the material or what is learned, 2) geography skills Which includes posing geography question or student skills in identifying problems and asking geographic questions, acquiring geographic information or collecting data including observation and measurement of geographic phenomena, organizing geographic information or the ability to organize or process data, analyze geographic information or the ability to analyze data to answer Questions or problem solving, answering and designing solution or ability Answer or solve problems and communicating geographic information that is the ability to communicate or inform geographical data to a peoples like a teacher in learning, and 3) geography perspectives [8].

Then, in UU SISDIKNAS No 20 of 2003 Article 3 mentions that "the purpose of national education is the development of potential and students to be people who believes and piety to Almighty God, noble, healthy knowledgeable, capable, creative, independent, and become a democratic citizen and responsible. This means that the national education in Indonesia is directed towards the formation of people who possess the necessary skills in sustaining the culture and identity

of the nation in the middle of the onslaught of various cultures and civilizations of other nations in the era of globalization [2].

To achieve this, various efforts have been made by the government such as by developing curriculum in Indonesia and current learning practices refer to the Curriculum 2013 and oriented the skills of the 21st century, strengthening character education and supporting the national literacy movement. The development of this learning paradigm must be understood by the teacher as the spearhead of learning. Teachers should be able to position themselves as learning facilitators and provide a broad space for students to develop their own potential.

Based on Ministry of Education Regulation No. 22 about "Standard Process of Primary and Secondary Education" it is explained that learning process in educational unit is held interactively, inspiration, fun, challenging, motivate learners to participate actively, and give sufficient space for initiative, creativity, and independence according to talent, Interests, and physical and psychological development of learners [4]. Then in the Competency Standards of Graduates[9] and Content Standards described 14 principles used in the learning process, among which is encouraging learners to actively seek out, using various sources of learning, emphasizing processes and approaches Scientific, learning that enables learners to learn with anyone as well as facilitate individual differences of learners.

Based on the above description, the characteristics of learning Geography in Indonesia minimal must have six characteristics, namely:

- Student centered and teachers play the role of teachers and facilitators in proportion
- Oriented to integrative development of knowledge, attitude and geographic skills
- Realizing a fun, interactive, democratic and collaborative classroom atmosphere
- Educators and learners alike learn in their respective contexts
- Develop the ability of analysis/HOTS learners through the provision of problems/tasks/problems are challenging and contextual.
- ICT based and rich learning resources.

The EXO OLO TASK learning model applied in this research has been designed to realize the geographic learning characteristics as described above.

2.3. *Effectiveness of learning*

Effective learning is a learning that is able to bring students to achieve learning objectives or the expected competence. Effective learning perspective that is; 1) Active participation, 2) Practice, 3) Individual differences, 4) Feedback, 5) Realistic context, 6) Social interaction. In this study, the effectiveness of learning is seen from two aspects, namely learning activities and learning outcomes. Learning activity is divided into three types: individual activity, paired activity and group/classical activity. This division of activity refers to the preparation of the ladder for the learner to Achieve optimal capability.

- Individual activities will provide opportunities for learners to perform exploration and introduction of the term in learning which is the initial phase of the learning cycle [10]. In this activity using technical "keyword" or key terms in the material being studied.
- Paired activity provides an opportunity for learners to develop their cognitive through interaction with others. This refers to the Social Constructivist Theory of Vygotsky known as the Proximal Development Zone/ZPD [11].
- Group activities provide space for learners to collaborate characterized by respect for diversity, mutual care and taking appropriate roles according to competence to solve a problem. Collaboration in learning has been shown to improve learning outcomes. As the results of Fawcett and Garton's study entitled "Effects of peer-to-peer collaboration on problem-solving skills in children". The study also confirms that language is a cognitive tool for learning and development and the value of interaction with peers for cognitive growth [11, 12].

In the execution of these three types of learning activities, the teacher applies the techniques of scaffolding characterized by, 1) the child is led step by step, 2) the level of help is changed as needed, 3) direct sampling and direct instruction, 4) reduction of guidance and handover of control Wood, [11]. To see the development of learning activities of learners in learning, researchers use observation sheet of learning activities equipped with assessment rubric.

Then, the effectiveness of learning as evidence of the influence of implementation of learning model EXO OLO TASK seen from student learning outcomes. Values taken from daily exams in which learners have completed learning for one basic competence.

3. Methods

The method used in this study is a quasi-experimental method. The design used is post-test control group design. The research population is all students of class X SMAN 3 Padang, amounting to 114 student. Samples are selected by random. The class selected as the experimental class is class X IS 2 while the control class is class X IS 1. Data collection technic is the test technique, observation and documentation. Test the requirements of the analysis using the test of normality and reliability. While the test results used to learn have gone through Validity and reliability test. Data analysis techniques use the "t" test to determine whether there are differences in learning outcomes between the experimental class and the control class.

4. Results and Discussion

Implementation of Learning Model of EXO OLO TASK in SMAN 3 Padang was held 4 times meeting. The material studied is dynamics of atmosphere and its effect on human life. Acting as model teacher is Dra. Ifna Sukmi, M. Pd. While the learning observer is Muhammad Rais (Student PPL S1 Geography Education), Zulkifli, Gr., S. Pd (Geography Teacher Post PPG SM3T) and Nofrion (researcher). The experimental class is class X IS 2 with a total of 30 students and the control class is X IS 1 with a total of 30 students [13].

4.1. Effectiveness of learning viewed from the development of learning activities

Observation of learning focused on the development of learning activities of learners that include; 1) individual activity, 2) pairing activity and 3) group/classical activity. Each observed activity is given values ranging from one to three with the following rating rubric (see in table 2):

Table 2. Rubric of student learning activity rating activity.

DIMENSIONS	EXCELLENT	GOOD	LESS
Scale	3	2	1
Individual Activity;	Demonstrate basic	Demonstrate basic	Shows basic learning
A. Basic Activities;	and advanced learning	learning activities	activities but less consistent
1. Observing	activities consistently	consistently and	and enthusiastic
2. Asking/trying	and enthusiastically	enthusiastically	
3. Gathering information			
B. Advanced Activities;		Or show further	
1. Process information		learning activities but	
2. Communicating		less consistent and	
ideas/opinions		less enthusiastic	
3. Discuss and collaborate			

For learning activities, the effectiveness of learning is seen from the increase in the number of learners who show the learning activities with a value of 3 and the reduction of learners who show learning activities with value of 1.

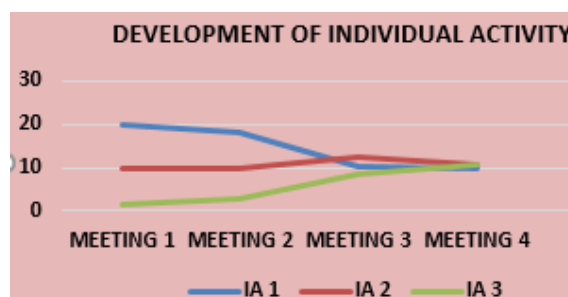
1. After the implementation of EXO OLO TASK learning model on geography learning in class X IS 2 SMAN 3 Padang, the development of individual activities of learners as follows:

Table 3. Individual activity development.

Meeting	Value and Frequency Individual Activity					
	1	%	2	%	3	%
First	23.6	76,12	6	19,35	1.67	5,38
Second	19.7	65,66	8.67	28,9	2.7	9
Third	14.3	46,12	7.67	25,56	3	10
Fourth	10.3	34,33	10	33,33	4	13,33

Sources: data analysis, 2017

From table 3 shows that there is a decrease in the percentage of learners who have individual learning activities with a value of 1. If at the first meeting there are 76.12% then at the fourth meeting reduced to 34.33%. While learners who have individual learning activities with a value of 3 has increased from 5.38% to 13.33%. More details are illustrated in the following graph (see in figure 1):

**Figure 1.** Development of individual learning activities.

Individual learning activities in the EXO OLO TASK learning model is developed through the "the power of keywords" technique. The teacher prepares the key words of the learned material and asks the learners to look for meaning and relationships between keywords. This individual activity becomes a ladder or scaffolding for learners to continue learning. That is, if learners do not master the keywords and do not understand the relationship between keywords then they will be difficult at the next learning stage. This individual activity is carried out in the first learning step of "reinforcement or concept nourishment" in which learners work on their own. Observers will monitor and record learning activities that learners show on prepared observation sheets.

The next learning activity that became the focus of observation is the paired learning activities. Learning activity is observed in the second learning step on the EXO OLO TASK learning model is EXO TASK is Examination Oriented Task is the provision of tasks or problems in accordance with the demands of the curriculum. In this stage, learners Arranged to sit in pairs to work on the package of questions that have been prepared. The development of learning activities in pairs of learners are (see in table 4):

Table 4. The Development of student paired learning activities.

Meeting	The Value and Frequency of Paired Activities					
	1	%	2	%	3	%
First	15	48,38	12.3	39,67	3.3	10,64
Second	15	48,38	12.3	39,67	4	12,90
Third	11.3	36,45	11	35,45	3.3	10,64
Fourth	11	35,48	10.7	34,51	4.67	15,06

Source: data analysis, 2017

In a paired learning activity, the number of learners who got a score of 1 decreased from the first meeting until the fourth meeting. Where in the first meeting as much as 48.38% then in the fourth meeting fell to 35.48%. On the other hand, learners who have learning activities in pairs with value 3

actually increased from 10.64% at the first meeting, to 15.06% at the fourth meeting. More details are illustrated in the following graph (see in figure 2):

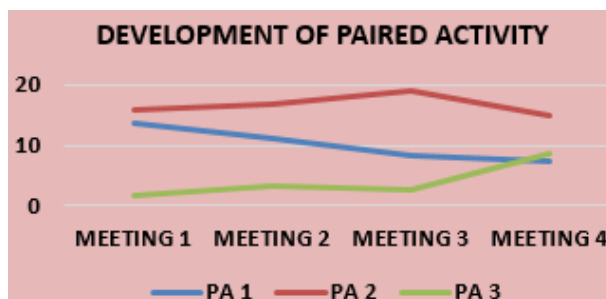


Figure 2. Development of paired learning activity.

Table 5. Development group/classical learning activity.

Meeting	Value and frequency group activity					
	1	%	2	%	3	%
First	21.3	68,70	6	19,35	3.7	11,93
Second	20	64,51	8	25,80	3	9,67
Third	8.7	33,46	12	46,15	4.67	17,96
Fourth	7.7	28,51	10	37,03	9.3	34,44

Sources: Data analysis, 2017

Table 5 shows the development of learners' learning activities in the form group/classical activities in which learners who have a value of 1 decreased from 68.70% at the first meeting then to 28.51 at the fourth meeting. While learners who have a value of 3 in group activity increased from 11.93% at the first meeting to 34.44% at the fourth meeting.

This group activity is monitored in the learning step of OLO TASK or Olympiad-Oriented Task as the fourth step in the syntax of EXO OLO TASK learning model. At this stage, educators provide tasks/questions that exceed the demands of curriculum or problem-based problems that aim to hone the ability to think a high level among learners. At the same time develop the spirit of collaboration between them. Students are divided into groups with the number of 4 people per group. Observations conducted on learning activities of students in groups and activities between groups/classical. As shown in the following graph (see in figure 3):

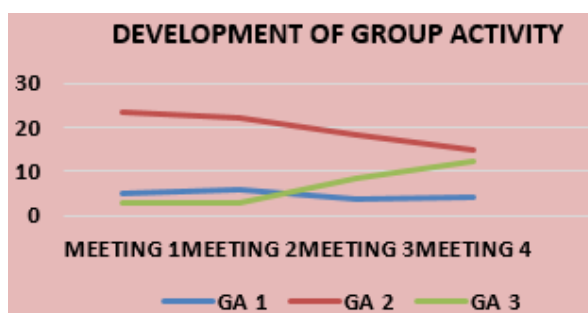


Figure 3. Group Activity Development

4.2. Learning effectiveness viewed from learning outcomes

In terms of process has been proven that the implementation of learning model EXO OLO TASK able to improve the quality of learning activities of learners are characterized by a decrease in learning activities with a value of one and the increase of learning activities with a value of 3. Furthermore, the effectiveness of learning will be seen from the learners learn. The data used are Daily Replication of atmospheric materials and their effects on life. The problem used as a test results of learning results has passed the validity and reliability test consisting of 45 questions.

After the data obtained learning results then tested the statistical category test requirements analysis of the normality test and homogeneity test. Test normality using Kolmogorov-Smirnov test. The result is show in table 6:

Table 6. Normality test.

		Experiment	Control
N		30	30
Normal Parameters	Mean	26.70	22.97
	Std. Deviation	4.145	3.285
Most Extreme Differences	Absolute	.117	.149
	Positive	.114	.149
	Negative	-.117	-.090
Kolmogorov-Smirnov Z		.640	.816
Asymp. Sig. (2-tailed)		.807	.518

a. Test distribution is Normal.

In the above results obtained experimental class data value significance of 0.807, so $\alpha = 0.05$ and for the control class value of significance 0.518, so $\alpha = 0.05$. Thus the sample comes from a normally distributed population.

Furthermore, homogeneity test is intended to show that two or more groups of sample data come from populations having the same variance. Test results show in table 7:

Table 7. Homogeneity test.

Learning Outcome			
Levene Statistic	df1	df2	Sig.
2.686	1	58	.107

Homogeneity test results show that the sig value. 0.107 Greater than 0.05 then the data is taken from a homogeneous sample.

After that, tested the hypothesis is to see whether there are differences in learning outcomes between the experimental class with the control class. Test results show in table 8:

Table 8. Two-point test results with test t.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Study result	Equal variances assumed	2.686	.107	3.866	58	.000	3.733	.966	1.800	5.666
	Equal variances not assumed			3.866	55.123	.000	3.733	.966	1.798	5.668

By using Levene test obtained sig value. 0,000. Thus the value of t arithmetic smaller than the value of α 0.05. That is, there are differences in experimental class learning outcomes with control classes. The statistical test results on students' learning outcomes further reinforce the fact that applying the Lesson Study EXO OLO Task Model on geography learning can improve learning outcomes significantly.

5. Conclusions

Implementation of EXO OLO TASK learning model on geography learning has been proven to improve the effectiveness of learning when viewed from two aspects namely the increase of learning activities and differences in learning outcomes of learners. Improved learning activities marked by the decreasing number of learners who got a score of 1 on all types of activities Observed and the increasing number of learners who scored 3 on all types of learning activities. Learning effectiveness was also evidenced by the significant differences in experimental class learning outcomes when compared to the control class.

References

- [1] Permendikbud RI Nomor 103 tahun 2015 tentang Penguatan Pendidikan Karakter
- [2] Badan Standar Nasional Pendidikan 2010 *Paradigma Pendidikan Nasional Abad-21* (Jakarta: BSNP)
- [3] Permendikbud RI Nomor 59 tahun 2014 *tentang Struktur Kurikulum SMA*
- [4] Permendikbud RI Nomor 22 tahun 2016 *tentang Standar Proses Pembelajaran Sekolah Menengah*
- [5] Getis A, Judith G, Bjelland D Mark, and Fellman D J 2011 *Introduction to Geography (thirteenth edition)* (Ohio State University McGraw Hill)
- [6] Marzano J R and Heflebower T 2012 *Teaching & Assessing 21st Century Skills* (Bloomington Marzano Research Laboratory)
- [7] https://www.nationalgeographic.org/education/national-geography-standards/?ar_a
- [8] Parjito 2015 *Visi Pendidikan Geografi di Abad 21 Prosiding Seminar Nasional 2015* Hal 249-251 ISBN:978-602-71506-3-8
- [9] Permendikbud RI Nomor 20 tahun 2016 *tentang Standar Kompetensi Lulusan*
- [10] Dahar, Wilis, and Ratna 2011 *Teori-teori belajar dan pembelajaran* (Jakarta: Penerbit Erlangga)
- [11] Upton and Penney 2012 *Psikologi Perkembangan Jakarta Penerbit Erlangga Ansyar, Moh 2015 Kurikulum Hakikat, Fondasi, Desain dan Pengembangan* (Jakarta: Kencana Prenadamedia Group)
- [12] Fawcett L M and Garton A F 2005 The effect of peer collection on children's problem-solving ability *British Journal of Educational Psychology* **75** (2) 157-169
- [13] Nofrion 2017 *Buku 1: Pedoman Pelaksanaan Model Pembelajaran EXO OLO TASK pada Pembelajaran Geografi*