

The Effect of Learning Cycle 7E Model For Geographic Achievement on Multi-ethnic Students

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Abstract—Geographic achievement are influenced by many factors. Teachers can implement 7E learning cycle models that exploit the capabilities early so that students can understand the material and develop the knowledge initially. East Kalimantan is the province which has students of various ethnicities, including Java, Kutai, Dayak, Bugis, Banjar, Batak, Toraja, and others. The aim of this study to describe the influence of the model LC 7E on geographic achievement at high school students of the school multi-ethnic. This study uses a quasi experimental nonequivalent pretest-posttest control group design with research subjects class X SMA totaling 96 people. Collecting data by using interview techniques, documentation, questionnaire, and test. Based on the test results are known that the multi-ethnic group of students with learning models have the results of the pretest LC 7E 53.40; posttest 75.60; and a gain of 21.60, while the multi-ethnic group of students with learning conventional models have the results of the pretest 50.95; posttest 67.67 and 16.64 gain. It shows the model LC 7E significantly affect results in students learning geography multi-ethnic than conventional models. Results of study of geography was not affected by ethnicity of students, but is influenced by the model and teaching methods. Understanding of teachers will be material, models and methods of learning and

culture character students, greatly affect the learning undertaken by teachers that learning objectives can be achieved.

Keywords—Learning cycle 7E, geographic achievement, multiethnic school

I. INTRODUCTION

Learning Cycle (LC) is a model of constructivist learning, and student-centered inquiry. As the opinion of Polyiem (2011) states" learning cycle is the inquiry learning process patter for learners to investigate the scientific knowledge through science process skill to search for knowledge or significant self-learning experience based on constructivist theory". The opinion was supported by Tuna (2013) which states" learning cycle model is constructivist model which provides learning a new concept or comprehension deeply a known concept".

Model LC 7E advantages lies in the learning objectives will be achieved. According Eisenkraft (2003)" the goal of the 7E learning model is to emphasize the increasing importance

of eliciting prior understandings and the extending, or transfer, of concepts". In addition, Lawson (2001) argues "learning cycle in the classroom help students construct concepts, develop reasoning pattern, and connect their new knowledge to real-life situations".

This is consistent with the purpose of learning geography that provide systematic learning experience, multi-perspective, and solve problems. Model LC 7E can help teachers achieve optimal learning in students. Research on LC 7E have been done in various fields of science and students level. The findings showed that the number of LC excels in managing science learning, both in improving attitudes towards science, academic achievement, understanding concepts, and thinking skills (Lawson, 1995). Unfortunately, a lot more research done on the subjects of science, while research subjects' geography has not been done in depth. Therefore, the results of research on the subjects of geography LC this will complement the results of previous research and prove the superiority of LC 7E.

Another reason the need to learn geography using LC models 7E are the advantages of LC 7E and another model did not have. These advantages, namely: 1) carried out by individuals and groups, 2) can be carried out inside and outside the classroom, 3) in accordance with the activity of studying geography (Gersmehl, 2008), and 4) use of the environment, maps, pictures, tables, diagrams and videos while learning. In accordance with the opinion of Slater, (1982) "as geography teachers we have a rich bank of data or resource items to aid us in process of helping students achieve generalization. Its means LC 7E models can be applied in teaching geography to improve learning outcomes of geography in high school students.

Learning model application itself does not guarantee a learning outcome is not accompanied by other learning components, namely students as learners. Learning will work well when differences of students are well understood by the teacher (Slavin, 2011). Selection of learning models should also consider the suitability of the material characteristics and the characteristics/culture students (Slavin, 2011).

Indonesia consists of 34 provinces which have diverse ethnic and cultural. People from the various regions, would affect the ethnic composition of the population of East Kalimantan be heterogeneous or multi-ethnic. Ethnic groups of East Kalimantan among other Dayak, Kutai, Banjar, Jawa, Bugis, Toraja, Bali, Batak, and others. East Kalimantan multiethnic population, also affect the ethnic high school students. This is a concern in the education system and learning to do in high school. Education in multiethnic schools is different from education in schools with ethnic one. Multiethnic education is an attitude in view of the uniqueness of human beings without distinction of race, culture, gender, sex, physical condition or economic status of a person. According Marouli (2002) multiethnic education aims to provide equal opportunities for all students regardless of their background, so that all students can fully improve in accordance with the interests and talents.

According to Banks (1993) "The term multicultural education (now) describes a wide variety of programs and

practices related to educational equity, women, ethnic groups, language minorities, low-income groups, and people with disabilities." On the same side, education multiethnic an education strategies that take advantage of the diversity of cultural backgrounds of the learners as one of the power to shape the attitudes of multiethnic (Maasawet, 2009).

Based on these descriptions suspected influence among LC 7E learning model for geographic achievement on student group multiethnic. This study investigates the influence of the model LC 7E on geographic achievement high school students as an educational input, how the learning characteristics of geography as a component of the educational process and its relation to problem-solving abilities of students as a result of education. In accordance with the background, the focus of the problem to be studied is the effect of LC 7E model of the learning outcomes of geography in high school students in multiethnic schools.

II. METHOD

This research is a quasi-experimental research design nonequivalent (pretest and posttest) control-group design (Creswell, 2002). Quasi experiment because there were external factors that influence the understanding of a concept that cannot be controlled. Two groups given different treatment, namely the model LC 7E and conventional learning. Both of groups were given a pretest and posttest.

Subject research conducted by stratify random sampling. This is done because the schools were selected based on the level of good, moderate, and low. This research subject is class X High School in East Kalimantan, namely SMAN 3 Samarinda, SMAN 7 Samarinda, and SMA YPK Tenggarong, totaling 167 students. Based on the problems that have been formulated and hypotheses proposed in this study, statistical analysis used was gain score and ANOVA.

III. FINDING AND DISCUSSION

East Kalimantan which includes provinces with high local income, become one of the residents of other regions to work. People from the various regions, would affect the ethnic composition of the population of East Kalimantan be heterogeneous or multi-ethnic. Ethnic groups in East Kalimantan among others Dayak, Kutai, Banjar, Jawa, Bugis, Toraja, Buton, Flores, Batak, China, Sunda, Lombok, and others. East Kalimantan multiethnic population, also affect the ethnic high school students.

The characteristics that some ethnic groups in the East Kalimantan although not consistent with the ethnographic study: 1) The Javanese, the Javanese are ethnic immigrants in the East Kalimantan with a distinctive character that is harmonious and respectful behavior (Conscience in Masaawet, 2009). The Javanese have a polite attitude and smooth although somewhat closed, so it tends to be quiet and not be denied if there is a difference of opinion (Mahfud, 2006; 2). Ethnic Bugis, ethnic immigrants in East Kalimantan on average livelihood as traders and entrepreneurs. Bugis ethnic group has the character to take risks in the pursuit of profits, confidence, perseverance, initiative and willing to work hard

(Liliweri, 2007; 3). Ethnic Banjar; is an indigenous ethnic South Kalimantan, East Kalimantan migrated to around 1565 from the Amuntai. Ethnic Banjar has a religious character and sociable; 4) Ethnic Dayak is the indigenous ethnic East Kalimantan which has a friendly nature, honest and love of mutual cooperation. Dayak more inhabit the upper reaches of the Mahakam River in East Kalimantan (Ibrahim, 2009; 5). Ethnic Kutai is a native ethnic East Kalimantan who originally inhabited the coast of East Kalimantan (Masaawet, 2009). In general, ethnic Kutai has a friendly character, honest, polite, and religious.

Learning on a multiethnic of students, not only aims to enable students to easily understand the material being studied, but also to raise awareness of students to behave humanist, pluralism, and democratic (Matas, 2009). All of these objectives will be achieved if teachers implement instructional models that correspond to the student and the material geography as well as learning devices.

Geography as knowledge to learn about the earth and humans, in learning to relate the two. The ways of learning geography at high school based on the material characteristics according Gersmehl (2008), among others: 1) teach about the location, circumstances, and the linkage of the phenomenon of geography; 2) describes the region, where a geographic phenomenon occurs; 3) describe the circumstances of a region, to explain the phenomenon of the geography of what is happening in the region; 4) create linkages between the regions to explain how the phenomenon of geography that happens. If learning geography conducted in accordance material characteristics of geography, students will understand the concept of geography in depth, not just memorizing concepts and understand the concept of auxiliary science of geography.

One model of learning that can accommodate this is the model LC 7E. The phases in LC 7E suitable for learning geography. The research conducted at multiethnic schools in the province of East Kalimantan, with research subjects' tenth grade students of 167 high school students. The study subjects were divided into an experimental group using the model LC 7E with a total of subjects 85 students, and a control group using a conventional model with a total of subjects 82 students. Research subjects consist of students of SMAN 3 Samarinda (good), SMAN 7 Samarinda (medium), and SMA YPK Tenggarong (low)

The following research data experimental groups (LC 7E model) totaling 85 students.

TABLE I. EXPERIMENTAL GROUP (LC 7E MODEL)

No	Suku	Pretest	Posttest	Gain
1	Banjar	69.17	81.00	11.83
2	Batak	48.40	73.80	25.40
3	Bugis	39.00	67.50	28.50
4	Buton	50.00	78.00	28.00
5	Dayak	48.14	73.29	25.14
6	Flores	48.00	65.00	17.00

7	Jawa	51.17	76.42	19.25
8	Kutai	50.09	68.00	17.91
9	Minang	50.00	78.00	28.00
10	Toraja	80.00	95.00	15.00
Mean		53.40	75.60	21.60

Based on table 1, note the average pretest 53.40; posttest 75.60; gain score 21.60. The average value is the highest pretest Toraja ethnic (80) and the lowest Bugis ethnic (39), so that the gain score is 41. While the average value is the highest posttest Toraja ethnic (95) and the lowest is Flores ethnic (65), gain posttest score was 35. The average increase in geographic achievement by using a model LC 7E the highest is a Bugis ethnic, Buton ethnic, and Minang ethnic (25) and the lowest is Banjar ethnic (11), thus gain score geographic achievement is 17. The research data of control group (conventional model) with a total of subjects 82.

TABLE II. CONTROL GROUP (CONVENTIONAL MODEL)

No	Suku	Pretest	Posttes	Gain
1	Bali	85.00	85.00	0.00
2	Banjar	57.23	70.31	13.08
3	Batak	72.00	92.00	20.00
4	Bugis	30.00	50.00	20.00
5	China	47.50	70.00	22.50
6	Dayak	48.50	64.50	16.00
7	Jawa	54.50	69.30	14.80
8	Kutai	48.77	60.46	11.69
9	Lombok	42.00	67.00	25.00
10	Sunda	35.00	55.00	20.00
11	Toraja	40.00	60.00	20.00
Mean		50.95	67.60	16.64

Based on table 2, note the average pretest 50.95; posttest 67.60; gain score 16.64. The average value is the highest pretest Bali ethnic (85) and the lowest Bugis ethnic (30), so that the gain score is 55. While the average value is the highest posttest Batak ethnic (92) and the lowest is Bugis ethnic (50), gain posttest score was 42. The average increase in geographic achievement by using a model LC 7E the highest is a Lombok ethnic (25) and the lowest is Bali ethnic (0), thus gain score geographic achievement is 25.

The follow results are the data analysis using t test to determine the effect of LC 7E models for geographic achievement on student group multiethnic.

TABLE III. GROUP STATISTICS

Model Pembelajaran	N	Mean	Std. Deviation	Std. Error Mean
<i>Learning Cycle</i>	85	74.73	12.560	1.362
<i>Konvensional</i>	82	67.59	9.916	1.095

The result of t test analysis obtained by mean of 74.73 for the model LC 7E and 67.59 to conventional models with significance level of 0.36.

TABLE IV. INDEPENDENT SAMPLES TEST

	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
<i>Equal variances assumed</i>	4.460	.036	4.070	165	0.000	7.144	1.755	3.679	10.610
<i>Equal variances not assumed</i>			4.087	158.844	0.000	7.144	1.748	3.692	10.596

Geographic achievement measured by the test given the lessons that have been received. In this case the test is given in the form of a multiple-choice test and an essay on the subject matter of the atmosphere. The geographic achievement of high school student's multiethnic schools that use the model LC 7E better than those using conventional models. The data analysis showed that the model LC 7E significantly affect the results of high school student's geographic achievement in multiethnic schools. The results of this study support the results of previous studies conducted in other subjects.

Based on the results of previous research models LC 7E significant effect in improving student learning outcomes at the various school levels in science subjects and mathematics (Turkmen, 2007; Hindarto, 2011; Polyiem, 2011; Qarareh, 2012; Tuna, 2013). The results of these studies indicate that learning with models LC 7E easier to improve student learning outcomes in the subjects taught, it is in line with the results of this study. Model LC 7E require students to construct their own knowledge possessed by students so that students are able to recall and connect the new concept with the concept of time.

This study uses multiple levels of school quality is good, moderate, and low, so it can represent all the characteristics of students. As research Medriati (2010) are developing models LC 7E at primary school with quality levels of different schools so that subjects in the study may represent a variety of student and school characteristics. Model LC 7E not only be developed and implemented in schools with good quality but also can be done in schools with lower quality as long as the teacher has the ability to implement the model learning cycle. This is done to test whether LC 7E can actually improve the understanding and application of concepts that indicate that LC 7E really excelled and has advantages. The research sample can also be selected based on the location of the school, the schools in the city center, just off the city and outside the city because it is based on differences in the location of the school will represent the school and student characteristics.

Based on the research results Kirna (2010) and Medriati (2010) turned out to be a model LC significantly influence the understanding and application of concepts students with different levels of schooling in science subjects. Research Polyiem (2011) at the middle school students, it turns LC 7E

affect the concept remembered longer and better. According Polyiem (2011) "students can gain more science process skills higher than 7E Reviews those learning cycle". If the students' understanding of concepts and skills well, then students will be able to connect between concepts are understood to solve a problem. LC 7E not only affect the students' understanding of the concept but also affect the ability or skill of students to solve problems in real life.

On the learning geography found many concepts that are concrete and should be taught contextually linked with experience or prior knowledge of students (constructivist), so that teachers can present material visually through the medium of learning. Learning outcomes can be improved with the implementation of learning model that connects students' initial knowledge and engage students actively in learning (Kirna, 2010; Medriati, 2010). It shows that learning with the learning cycle further enhance students' understanding on the concepts taught, whether it was a new concept in the know and concepts familiar to the students.

Appropriate learning models can not only improve student learning outcomes but also can help students to improve their skills. The results of research studies that support is Medriati (2010) "effective learning cycle model to improve the mastery of science concepts application of primary school students". It shows that learning outcomes can be improved by the use of models of learning appropriate to the material and the characteristics of the students. Learning geography in multiethnic schools become more meaningful, because it involves the environment and culture of the students as a learning resource. In accordance with the multi-ethnic education, learning geography provide systematic learning experience, multi-perspective and solve problems

According Qarareh (2012) "learning cycle helps the learner to reach a formula of what he understood of relationships that connect concept". It shows that learning with models LC 7E effect on students' understanding of the concepts being taught, whether it is a new concept in the know and a concept that is already known by the application of the model LC 7E. Students construct their own knowledge, so that students are able to remember and connects the new concept with the old concept. The result of studies show that the LC excels in

managing science learning, both in improving attitudes towards science, academic achievement, understanding concepts and thinking skills (Lawson, 1995). According Simatupang (2008) "application of the model LC basically not only be applied to science, but also can be applied in teaching social sciences and humanities". The research findings also demonstrate the effectiveness of the application of LC is determined by the characteristics of the subject, so that LC management is somewhat different for each field of science. In addition, research Tuna (2013) concluded "model LC in learning trigonometry effect on students' academic skills and knowledge". The results showed LC 7E can be done not only in science subjects but also in social studies and math including geography. It's needs to do the model LC 7E on geographic study because the concepts of geography, atmospheric especially material related to science concepts.

Geography also contributes at providing an understanding and skills related spatially oriented competencies that can be applied in everyday life of students. The essence of education, according to John Dewey in his book *Experience and education*, is a social process. Education is growth. Education is not preparation for life, education is life itself. Education is a social process. Education continues to grow. Education is not preparation for life, but life itself (Marouli, 2002). In accordance with the multiethnic education that can be formulated as a form of awareness about cultural diversity, human rights and the reduction or elimination of various types of bias (prejudice) to build a fair society and a life ahead.

Learning geography to consider ethnic of students will be able to present the cultural diversity in responding to demographic and cultural changes in a specific community or even the world as a whole or globally (Mahfud, 2006). Based on these explanations, it can be concluded that education in a multiethnic school in response to the development of the diversity of the population, as demand equal rights for each group. Multiethnic Education covers all students without discrimination and discredit them by gender, ethnicity, race, culture, social status, religion, talents and abilities, and others. Therefore, by looking at the context of Indonesia, it should be learning in school multiethnic applied as an education that addresses the needs of the school with regard to the diversity of human complex and diverse culture, and reflect on the importance of culture, race, sexuality and gender, ethnicity, religion, social status, and economics in the educational process.

IV. CONCLUSION AND SUGGESTIONS

Based on the results and analysis of the research data, it can be concluded that the model LC 7E significantly affect the geographic achievement of multiethnic students at high school. East Kalimantan as a multiethnic school, consisting of 14 ethnic students, namely Bali, Banjar, Batak, Bugis, China, Dayak, Flores, Jawa, Kutai, Lombok, Minang, Sunda, and Toraja.

Geography achievement at a multiethnic school students affected by learning model and student characteristics. It will be achieved optimally if teachers link the students' prior knowledge of the material that will be studied and the daily

lives of students. Education at multiethnic schools must pay attention to the diversity of cultural character of students, in addition to the teachers need to know and understand students' diverse backgrounds.

ACKNOWLEDGMENT

Education in schools should be more emphasis multiethnic cultural elements which vary according to the ethnicity of each student, so that students understand and respect the differences in culture characters. Learning in multiethnic schools requires teachers to be more creative in packaging of learning appropriate to the character of students and student learning styles. Teachers can use the model and media that can accommodate all cultural character of students so that learning objectives can be achieved.

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