

APPLYING COGNITIVE CODE TOWARDS INDONESIAN EFL LEARNERS' WRITING COMPETENCE IMPROVEMENT

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Abstract: This classroom action research (CAR) presents a research for solving the student's problems in writing class by using two cycles of Kemmis and McTaggart. In this CAR, there are three crucial instruments. They are students' learning journal to know what the student' map thinking which is related to the cognitive code and the writing material, researcher' journal and questionnaire. The students' problems in *writing subject* happen in one class of English Department of the University of Kuningan, West Java - Indonesia. The learners find it difficult to process words into sentences. Applying cognitive code in this CAR is the strategy, with the purpose to know what the students need by asking them to use some tools such as student's learning journal, thus the students are able to tell their difficulties based on their learning experiences in class. Cognitive code looks students or learners as thinking being and learn based on their learning experience. The students' writing competence in the beginning of this research is 40, meanwhile, after applying cognitive code as the method of teaching learning process, the class average gets 64.5 in the post test. Thus, the normalized gain to measure the students' writing development is on number 0.7, it means the students' writing improvement is moderate. The students' attitude toward cognitive code is taken from rating scales is 82%. Based on the data, it can be concluded that cognitive code is effective method in teaching writing.

Keywords: cognitive code, writing competence, learners' errors

INTRODUCTION

Learners' errors in English as a foreign language in Indonesia is encountered by them in using the language. These errors in *writing subject* happen in one class of English Department, the University of Kuningan, Indonesia. The learners find difficulties to process words into sentences, so the researcher needs a strategy to solve the problem. Applying cognitive code in this class room action research (CAR) is the strategy, with the purpose to know what the students need by asking them to use some tools such as student's learning journal, thus the students are able to tell their difficulties based on their learning experiences in the class to the teacher.

Cognitive code looks students or learners as thinking being and learn based on their learning experience (Hutchinson and Waters, 1991). This definition is also explained by Heo, *et al* (2011), a cognitive approach is a way to learn and human development emphasizes on mental or internal factors. A cognitive aspect also has greatly influenced on understanding of factors in language learning. By knowing the students' mental and knowing their needs, it is able to help the teacher in helping students' lack especially in writing as a focus of this study. Olson and Land (2007) stated that in teaching a language especially how to write, the teacher should use a cognitive

strategy and the strategy is explicitly learned. Providing a lot of discussion, modeling, guided practice and meta-cognitive reflections are implemented. These strategies will also apply in the researcher's object research, in one class at private University above.

According to Alwasilah (2011), the teaching learning process (TLP) will not be successful if the teacher just masters the materials but not masters the practice of learning process it self, such as in choosing a suitable method or technique in TLP in the class room. Thus by using cognitive approach in this research, the teacher is able to create a great opportunities for students to think creatively and freely in their writing.

Learning is cognitive and linear area in which a learner processes an input, an interaction, and produces a language (Kite, 2009). Thus, researcher assumes that cognitive code is a suitable learning theory which is able to apply in teaching language, especially in writing subject because in this approach, the researcher is given technique how to face a class and how to transfer new knowledge by knowing cognitive process of the students which explained in cognitive code.

Actually, the key to successful language learning and teaching lies not in the analysis of the nature of language but in understanding the structure and processes of the mind (Hutchinson & Waters, 1991). So that seeing the characters of this NSS at the University who are passive and have low potential in improving their foreign language acquisition, researcher uses cognitive code as the approach. The appropriate theory of learning that can be applied based on the problems is theory of cognitive code. In this theory, a teacher takes the students to be an active information processor or we can call it student centre learning, the basic teaching technique in cognitive code will

apply in object of research is the problem solving task (Hutchinson & Waters, 1991).

Writing is not an easy activity (Pinter, 2006). A writer needs a fresh state of mind to be able to pour all their writing skills. So with cognitive code method, students have a great opportunity in writing in accordance with their creativity. It is chosen because not only students' writing skill which is still poor, but also their interest is still poor in writing English. By applying cognitive code the teacher in this research does not force students to write what the teacher wants but just give a genre and simple explanation of it before, so that about the content it is back to the students' interest.

Writing is a text (Halliday & Hasan, 2004). Text refers to any instance of language, in any medium, that makes sense to someone who know the language (Halliday & Hasan, 2004). The text is used in this research is arguing or argumentative text. Text can be formed becomes an essay. An essay is a short collection of paragraphs that describes facts, opinions, and ideas on a topic, and an essay also usually has three to ten paragraphs (Folse *et al.*, 1999).

So, by applying cognitive code as a method or approach in TLP at class, the students are hoped to be able to master english especially in their writing competence by using theory of learning cognitive code actively.

METHOD

The type of action research in this researcher is practical action research. Practical action research is intended to adress a specific problem within a classroom, school, or other community. It can be carried out in a variety of setting -educational, social service, or business- (Fraenkel & Wallen, 2006). In this case, the researcher focusses on educational or more specifically is class room action research (CAR).

CAR is examined the impact of learning theory of cognitive code toward students's writing competence. A pre-test and post-test use to determine subject's achievement growth.

Design or model in this classroom action research uses design action research of Kemmis and McTaggart. The design can be seen on Figure 1.

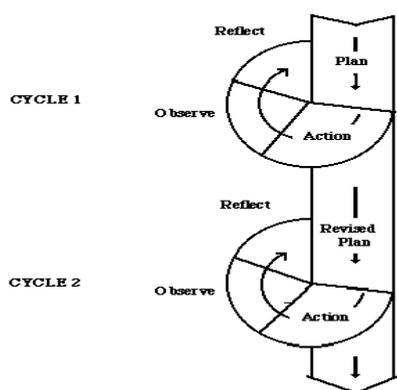


Figure 1. A cycle of action research (adapted from Kemmis & McTaggart, 1992 as cited in Fraenkel & Wallen, 2006).

The students in this object of research is in one class consist of 25 students of English Department of the University of Kuningan, Indonesia . Writing is a subject which is focused to be improved.

According to design CAR of Kemmis & McTaggart, the duration of the research is done in at least two cycles. One cycle is obtained from three to four meetings. So to finish this research, the researcher takes at least seven meeting.

The data resource of this research is from primary data. Besides, both quantitative and qualitative, the data is also collected during this research by using some journals. The researcher uses two kinds of data collection instrument in this research, those are *researcher completes* and *subject completes* (Fraenkel & Wallen, 2006).

In the researcher completes, there are rating scales, interview schedules or questionnaire and observation form.

Whereas, the subject completes are taken from pre-test and post test. In these test, the teacher uses the same instruction. It is asking the students in writing class to make an argumentative text in one hour with at least consist of three paragraphs. The students do not allow to take any sources in the book or even in the internet.

In scoring and correcting both pre-test and pot-test the researcher does it with the team. There are two assessors. They are the lecturer in this university. The writing assessment which used the team, adopted of Heaton (1990):

Table 1. Format of writing assessemant

	55	44	33	22	11
Generic structure			xX		
Grammar		xX			
Vocabulary				xX	
Mechanics				cX	
Fluency			xX		
Relevance			xX		
Total	17				

For pairing both pre-test and post-test, the researcher uses *the normalized gain* which developed by Hake (Meltzer, 2002) to see the percentage of the students' writing improvement. See the following formula:

Table 2. The normalized gain

Gain score	Interpretation
$g > 0,7$	High
$0,3 < g \leq 0,7$	Moderate
$g \leq 0,3$	Low

RESULTS AND DISCUSSION

The following are the calculation of students' achievement in the pre-test by asking all of students in one class to make an argumentative text in one hour. The writing assessment of the test is taken from Heaton (1990).

Table 3. The recapitulation of pre-test

Average	440
Min	223
Max	660
Median	440
Modus	45

According to the table, it shows that the students' writing competence in pre-test is still low because the average or mean only 40, median 40 and the mode is 45. While the minimum score for getting C-A in *writing 2* of this University is 65-75. So the data shows almost students in this class are not able to write an argumentative text well. The assessor considers of generic structure, grammar, vocabulary, mechanics, fluency and the relevance of the text.

The following are the calculation of the scores of the students in the post test. In this post test, the researcher or the teacher uses the same direction with the pre-test, asking the students to make an argumentative text. The teacher also uses the same evaluation of it, focus on the generic structure, grammar, vocabulary, mechanics, fluency and the relevance of the text.

Table 4. The recapitulation of post-test

Average	664.5
Min	447
Max	881.5
Median	663
Modus	663

The data above shows that the students' competition in writing is getting better than the pre-test. It looks from the score enhancement which is increase 38% of the pre-test. The average of this post test is 64.5 with the higher score is 81.5, it means, it is better than the pre-test.

The improvement of students' achievement also can be proven by using the normalized gain (g) with is compared the pre-test and the post-test:

$$g = \frac{64.5 - 40}{75 - 40}$$

$$g = 0.7$$

According to the table 3.3, if $g > 0.7$, it means the improvement of teaching learning process to get the goal of learning is high, meanwhile if $0.3 < g \leq 0.7$, it means moderate in improving students' ability in getting the target score. And the last, if $g \leq 0.3$, it shows the improvement of students' quality with using the teacher's method is low.

So that, according to the normalized gain criteria in table 3.3, the improvement of students' writing skill after getting treatment by using cognitive code as the teacher's method in TLP is moderate. Because of the g is 0.7 or $0.3 < g \leq 0.7$. So, the researcher is able to state that cognitive code is a good enough method in improving students' writing skill.

In this classroom action research, the researcher provides questionnaire as one of instrument is used to get the students' attitude toward the researcher methods in TLP. This questionnaire consists of five questions with 5 intervals and it is examined by using rating scale method. These questions divide into two kind of attitude aspect, it is cognitive and affective aspect.

The researcher gives the questionnaire to the 19 students in researcher's class, with the aim for responding the researcher's method (cognitive code) in teaching learning process toward the students' writing improvement.

Here is the table of the students' attitude result:

Table 5. Table of the students' attitude

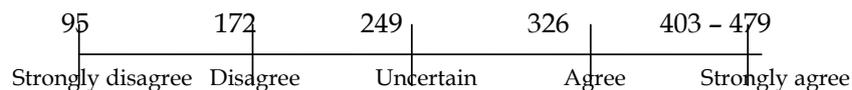
Total Respondent	19
Total question	5
Option/ question	5
Result from all questions	399

Option in each question and the score:

- 1. Strongly agree 5
- 2. Agree 4
- 3. Uncertain 3
- 4. Disagree 2
- 5. Strongly disagree 1

Table 6. Class Interval

Interval class number	Interval
1	95 - 171
2	172 - 248
3	249 - 325
4	326 - 402
5	403 - 479



According to the data, the result of the students' attitude toward cognitive code which the researcher uses in the teaching writing is 399. It means the students' attitude toward cognitive code in improving their writing skill, is agreed of the students or 82% of respondents of this questionnaire agree because the score is 399, it means the result of the questionnaire is in interval 326 - 403 with the statement "agree". This result is based on the students' cognitive and affective aspect.

However, the researcher is also going to explain every aspects of both influence of cognitive code toward the student's cognitive and the student's affective below:

In the questionnaire, the researcher inserts three questions (no 1, 2, 3) related to the students' cognitive aspect. If all of students give highest point in the three questions, so the total is 284. But according to the data, total for the students' cognitive attitudes cognitive code method is 239. It means that the students' cognitive increase 84% after the teacher applies cognitive code as the method in TLP.

Meanwhile, for measuring the students' affective the researcher gives two questions in the questionnaire (no 4 and 5). Based on the data scoring for improving the students' affective

attitudes cognitive code as the researcher method in teaching writing is 160. While, the maximal score if all of students give the highest score for each question the total is 190. Thus, the percentage of improvement the students' affective after the teacher applies cognitive code as the method in improving the students' writing is 84%. This percentage is the same with the students' improvement in their cognitive aspect.

CONCLUSION

In applying cognitive code, the teacher provides opportunities to the students in expressing their opinions, critical thinking, and shows the students' prior knowledge related to the material be discussed. Thus, in addition to opening big opportunities to the students to be active learners, these ways also help the teacher to measure the students' ability in the subject and assist the teacher to find out the solutions of the students' problem in TLP.

In this CAR the researcher uses some instruments research related to the cognitive code in writing class. They are students' learning journal and the researcher journal. It is effective to help both students and the teacher in achieving objectives of learning in the class, in particular argumentative writing competence. Beside that, the researcher

provides the other instruments such as questionnaires and tests.

After about 2 cycles of the research, learning outcomes can be seen from the figure obtained through the acquisition of the post-test. In the post-test, the average grade has improved from 40 in the pre-test to 64.5 in post test. To see the percentage of students' writing improvement, the researcher uses normalized gain. Therefore, the normalized gain in comparing the pre-test with the post-test is 0.7. It means that the percentage of the students' writing is moderate. This number can be proven that the method enables students to improve their writing competence.

The success of this method is also directly proportional to the questionnaire given to the students, based on the questionnaire that has been processed. It is stated that more than 82% of the students like the techniques or methods of this research in improving the quality or competence of the students in writing. It means that almost of the students interest the cognitive code as a method of TLP in the class. Moreover, by using the method of cognitive code there is good improvement in students' activeness in class discussion. It is caused of process and strategy in cognitive code approach. The strategies are asking a lot of questions, monitoring, discussing and reflecting the TLP to the students.

In conclusion, after applying cognitive code there is good improvement in students' writing, in that they are able to produce an English writing better. In addition, the students' enthusiasm gets improving, caused by the cognitive code approach making the students to be an active processor. They also explained that to successful language learning and teaching is in understanding the structure and processes of the mind. This research provides a lot of discussion and many tools to monitor the students' thinking

way. The improvement of students' ability in writing and the enhancement of the students' attitude have proven that the cognitive code is good method to be applied in writing class.

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