

Full Length Research Paper

Enhancing argumentative writing skill through contextual teaching and learning

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This study aims to describe the influence of contextual learning model and critical thinking ability toward argumentative writing skill on university students. The population of the research was 147 university students, and 52 university students were used as sample with multi stage sampling. The results of the research indicate that; group of contextual learning model has more significant influence than group of non-contextual learning model, there is an interaction between learning model and critical thinking ability, there is a significant difference of argumentative writing skill between group of contextual learning and non-contextual learning for the group with high critical thinking ability, and there is also significantly different argumentative writing skill between contextual learning and non-contextual for the group of low critical thinking ability. Based on this finding, the researcher concludes that critical thinking ability and contextual learning model have significant influence toward argumentative writing skill.

Key words: Contextual, non-contextual learning model, argumentative writing skill, critical thinking ability.

INTRODUCTION

Language is a human communication instrument. Almost every day humans use language, receptively or productively. By using language, humans present their feelings, ideas, inspirations, imaginations, and convey everything to everyone else. Beside, language is not only a medium of communication, but also a means of representing human intelligence. This is why language is often considered an indicator of intellectuality.

Campbell et al. (2002) states that language is an example of primary intelligence of human being. They also maintained the rhetoric aspect of language, as an

ability to convince someone, a potential tool to remember a list or process, the capacity to explain concepts, metaphors' values, and it is used to analyze language in terms of "metalinguistic". These language abilities need to be taught in order to engender human's language skills. There are several aspects of these skills (Adejimola and Ojuolape, 2013), and these are:

1. Listening and comprehending
2. Speaking
3. Reading, and

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4. Writing.

Of these skills, writing is the most complex ability compared to others. When writing, one must have indirect communication ability, language structure, writing techniques, and the ability to extract ideas from text.

The complexity of writing activity requires systematic and well-ordered thinking that must be mastered by students and which finally will be the way of their behavior (Gonye et al., 2012). The behavior of thinking orderly will lead students to deliver messages, ideas and feelings systematically, and foreseeable in writing activity then. Rather than to teach writing theory, writing instruction should be focused on writing activity. Teaching only focused on writing theory will cause passivity and unproductivity, even though students have retained knowledge of various techniques of writing. Many scholars in linguistics and literature programs are not productive in writing (Alwasilah and Alwasilah, 2005). It means that mastery of writing theory is not sufficient condition for someone to be active and productive in writing.

Writing skills are not gifted skills or not categorized as cultural knowledge, nonetheless they can be achieved by learning and training processes. In the study of Paas and Sweller (2011), this kind of knowledge was classified in secondary biological knowledge, which cannot be achieved by “naturally” process. In other word, to attain this skill, someone has to train continually and be guided by expert (Magogwe, 2013). This kind of learning, principally is of learning that borrows knowledge and skill from others (Paas and Sweller, 2011; Sweller and Sweller, 2006). With this method, students can learn other ideas through sentences which are expressed in the form of writing. Furthermore, by this method students attempt to explain to themselves the ideas, opinions, thoughts, feelings, desires, or expressions which are written in other writings (Chi et al., 1989; Chi et al., 1994; Johnson and Mayer, 2010). By this method also, students drive to express the sentence connections and finally are able to generate the meaning of others thinking thoroughly. Learning this way, students can develop critical thinking in writing by learning from others.

One important type of writing to be learned in school and in the university is argumentative writing (Alarcon and Morales, 2011; Nippold, 2000; Preiss et al., 2013). It has an effect on the success of learning (Preiss et al., 2013). At university, students usually write argumentative writing when they create a paper for daily routine tasks or thesis. They use these argumentative writings because a paper deals with new and original ideas, and it must be written with strong and convincing argumentation. Faraway, argumentative skill is very important when students engaged in professional working environment, they have to convince and persuade colleagues related to their professions in well-behaved argumentation.

Certainly, argumentative writing skill is not at ease to get (Chanie, 2013; Deane and Song, 2014), and the most difficult kind of writing among others (Ferretti et al., 2007; Neff-van Aertselaer and Dafouz-Milne, 2008). Students frequently generate incomplete argumentation; they do not assert elements of argumentation; they do not write down clearly; there is insufficient evidence to support argumentation, and students might not comprehend or respond to other possibility of viewpoints (Ferretti et al., 2000). Amogne (2013) states that many students cannot criticize well statements and give convincing support. The most emerging problem is students' inability to conduct well-mannered declarative statements, because they are not used to work with this type of writing and also they have insufficient knowledge to support their argumentation considerably and clearly. Likewise, some research show that students' difficulties come from grammar and lexis (Chanie, 2013).

The main obstacle in argumentative writing is the indicator to measure the success. The success of argumentative writing is when reader can be persuaded, brought, and conveyed to the paradigm that is stated and believed by the writer (Pranowo, 2000). In other word, good argumentative writing should contain several aspects which are:

1. Data
2. Claim
3. Warrant
4. Backing
5. Modal qualifiers
6. Rebuttal (Shehab and Nussbaum, 2015; Toulmin, 2003, 2009) or at least contain the first three aspects (Karbach, 1987).

Ka-kan-dee and Kaur (2015), Lertpreedakorn (2009), Panahandeh and Esfandiari (2014), Promwinai (2010), and Schworm and Renkl (2007) are some of the researchers who attempted to overcome the difficulties in argumentative writing. Lertpreedakorn (2009) and Promwinai (2010) show that the ability for writing argumentation might be increased by choosing an effective strategy in order to stimulate students' writing ability. Research conducted by Schworm & Renkl (2007) employed *self-explaining* as a method to improve argumentative writing skill focused on ill-structured problems. Through this method and using the instruction about declarative knowledge and connected with argumentation could bring to light students' argumentative production. On the other hand, research by Panahandeh and Esfandiari (2014) revealed that a classroom which used metacognitive instruction strategy could perform influence better in writing ability for students with moderate writing ability compared with control classroom.

Another research from Ka-kan-dee and Kaur (2015)

states that there are some issues to decide on choosing the appropriate strategy to enhance argumentative writing ability. These according to Ka-kan-dee and Kaur (2015) are:

1. Employing different topics and various activities in the classroom in order to motivate student to be an active learner.
2. Analyzing textual examples and presenting students' understanding based on those texts in front of the class.
3. Understanding students' learning styles and affording necessitates to develop their writing ability.

Related to those strategies, teachers need to take into account an effective students' social interaction and provide effective scaffolding. In view of those strategies also, the researcher needs to consider instructional as an approach that can conceal all issues pointed out before.

Contextual teaching and learning (CTL) theoretically encompass all of the recommendations listed earlier. CTL principles can facilitate students to comprehend instructional subjects and develop creative ideas in the form of writing and make a link between academic subject and real world context. Context in this manner is related to existing experience, personal life spans, societal problems, and their milieu. There are seven principles which are contained in contextual teaching; constructivism, inquiry, questioning, learning community, modeling, reflecting, and authentic assessment (Nurhadi, 2002).

Another aspect that closely relates to argumentative writing ability is critical thinking. Keraf (2000) states that the foundation of argumentative writing skill is critical thinking ability. Without this ability, according to him, the product of argumentative writing only contains sequences of meaningless sentences or paragraphs. This claim is supported by Pranowo (2000), who confirms that there is a strong connection between critical thinking ability and argumentative writing.

Research questions

In general, these research questions are meant to compare students with argumentation writing skills with those with contextual and non-contextual instructions. Specifically, this research sought to address the following:

1. Are there significant differences between students with argumentative writing skills and those who learn by contextual and non-contextual teaching and learning?
2. Is there an interaction between instructional model and critical thinking ability to students' argumentative writing skill?
3. For lower level students' argumentative writing, is there significant difference between students who learn by

contextual and non-contextual teaching and learning?

METHODOLOGY

Design

A quasi-experimental design, with post-test measurements and two groups (experimental and control) was employed (Creswell, 2014). The independent variables of this study consisted of treatment and attribute variables. The treatment was contextual teaching and attribute was critical thinking ability. Classrooms are randomly assigned as treatment and control group. Only students in the treatment group received contextual learning. Students in the control group continued their normal lessons but they also solved the problems studied in treatment group.

Participant

The participants of the study consist of second year students studying in one of the Universities in Banten, Indonesia. The universities were selected conveniently. Fifty two students took part in this study. Of this number, 26 were experimental group and 26 were control group. Each group consisted of low and high level critical thinking ability.

Instrument

Instruments used in this research were questionnaires and tests. Questionnaires were employed to collect data regarding teaching method, while test instruments were used to collect data on the critical thinking and argumentative writing skill abilities. These instruments have been developed by the researcher. There were four stages:

1. Developed variables instrument
2. Developed instrument content
3. Limited field test
4. Validity and reliability test instruments

Argumentative writing instrument

Essay test was an instrument to assess students' argumentative writing skill. Students were required to write an argumentation on some topics. There were several assessments regarding argumentative writing;

1. Argumentation language, consisting of comparison and contention.
2. Argumentation contents, consisting of considering author credibility, empirical data, logic or reason, value, emotion, and attitude
3. Argumentation techniques, consisting of paragraph development and coherence.

Before argumentative writing instrument was used, this instrument was tested to other 20 students. They had to write argumentative essay at least 350 words, with certain topic. Students chose one topic from five topics provided. They were to choose either handwriting or type it in word processing software. The method to determine instrument reliability is interrater reliability (ratings). Ratings were calculated by two lecturers. As a result, the reliability score was 0.76. This score was categorized high as it showed that

Table 1. Mean of score of argumentative writing skill in the experiment and control.

| Critical thinking ability | Statistics | Groups | | Sum |
|---------------------------|--------------------|------------|----------------|-------|
| | | Contextual | Non-contextual | |
| High | N | 13 | 13 | 26 |
| | Mean | 82.15 | 74.54 | 78.35 |
| | Standard deviation | 7.85 | 11.39 | 10.34 |
| Low | N | 13 | 13 | 26 |
| | Mean | 66.77 | 70.46 | 65.62 |
| | Standard deviation | 8.11 | 6.54 | 7.31 |
| Total | N | 26 | 26 | 52 |
| | Mean | 74.46 | 72.50 | 73.48 |
| | Standard deviation | 11.08 | 9.33 | 10.19 |

Table 2. Summary of Tukey post hoc two way ANOVA.

| Compare groups | Absolute mean difference value | Free Degree | Q _{val} | Q _{tab} | Note |
|----------------|--------------------------------|-------------|------------------|------------------|------|
| A1B1 and A2B1 | 7.62 | 4.48 | 14.14 | 2.798 | Sig |
| A1B2 and A2B2 | 3.69 | 4.48 | 6.85 | 2.798 | Sig |

A1B1: Sample of High Critical Thinking Ability with Contextual Model; A2B1: Sample of High Critical Thinking Ability with Non-Contextual Model; A1B2: Sample of Low Critical Thinking Ability with Contextual Model; A2B2: Sample of Low Critical Thinking Ability with Non-Contextual Model.

this instrument could be used in this research.

Critical thinking ability instrument

Critical thinking ability data were attained by testing several aspects, which:

1. Ability to contrast knowledge. This aspect consists of arrangement and identification.
2. Ability of students to express their thinking openness. This consists of an ability to acquire similar and dissimilar author ideas.
3. Ability to understand author perspectives. This consists of explaining, resuming, and stating
4. Ability to analyze. This consists of comparing and contrasting
5. Ability to synthesize
6. Ability to evaluate argumentation.

Similar with argumentative writing instrument, critical thinking ability instrument also tested 20 students to determine validity and reliability. Validity instrument employs Pearson product moment, the item is valid if r score $>$ r table at $\alpha = 0.05$. There were 30 items, 26 items were accepted (valid), but 4 items were invalid. Besides, reliability instrument employs alpha Cronbach, the reliability criteria is shown by alpha coefficient. As a result, from 26 items the alpha coefficient was 0.91 which was categorized as very high reliability.

RESULTS

Descriptively, the mean score of students' argumentative

writing skills in contextual teaching classroom is higher than the control group (Table 1). This condition holds for students who critical thinking ability is low and high. Further, according to statistical test (Tukey Post-Hoc), there is a significant difference between experiment and control groups at $\alpha = 0.05$. This condition lets the researcher to determine that contextual teaching model instruction has an effect on argumentative writing skills than non-contextual instruction model (Table 2).

This condition holds because contextual teaching affords the chance for students to actively learn and improve their previous knowledge base on information they got when studying in the classroom. Previous and new knowledge can be connected with students' daily life. Students act naturally and properly with brain function, human base psychology, and also three principles of humanity, which are dependency, differentiation, and self-regulated, all of these conditions lead to students' success when they write argumentations. Different conditions occur in control group classroom: instruction control by lecturers, students act as objects, and one directional instruction, which of course make students become passive.

The findings also suggest that there is an interaction between instructional model and critical thinking ability; the F value (4.61) $>$ F table (4.030) (Table 3). In other words, argumentative writing skill ability is affected by

Table 3. Summary of measurement analysis with two between subject factor (group and critical thinking ability) and a within subjects factor (test).

| Change sources | Free degree | Sum square | Sum square average | F value | F table | |
|-------------------|-------------|------------|--------------------|---------|---------|-------|
| | | | | | 0.05 | 0.01 |
| Between groups | 3 | 2.429.77 | 809.92 | 10.80* | 2.683 | 3.955 |
| Within groups | 48 | 3.598.46 | 74.97 | - | - | - |
| Groups | 1 | 723.77 | 723.77 | 9.65 | - | - |
| Critical thinking | 1 | 1.360.69 | 1.360.69 | 18.15** | 4.030 | 7.159 |
| Interaction | 1 | 345.31 | 345.31 | 4.61* | - | - |
| Total | 51 | 6.028.23 | - | - | - | - |

** : Significance at $\alpha = 0.01$; * : Significance at $\alpha = 0.05$.

critical thinking ability and instructional model. This finding suggests that the lecturer has to consider critical thinking aspect when teaching argumentation writing. Critical thinking ability can be accessed from students' ability when they identify problems, arrange table, express their mind, contrast, summarize, analyze, and conclude. These conditions are supported by contextual teaching model, because this model has questioning principle that lead students to know, reveal and get appropriate information while they are writing argumentation assignment.

The findings show that students with high critical thinking ability in contextual model get better scores than those in non-contextual teaching. The mean argumentative writing score between experiment and control group respectively (82.15 and 74.54) (Table 1) and statistically significant at $\alpha = 0.05$ (Table 2). This occurs because students with high critical thinking ability have "assets" or "resources" to support the condition which is generated by contextual model. Contextual model requires students to find for themselves information and knowledge through activities such as:

1. Observing
2. Questioning
3. Explaining
4. Designing
5. Conjecturing
6. Proving
7. Analyzing, and
8. Concluding.

Contextual model also generates learning community which supports students to learn and improve upon their ideas in their community. Unlike in high students' critical thinking ability, it seems that contextual model is "unsuccessful" to facilitate students with low critical thinking ability. The mean score of argumentative writing ability with contextual and non-contextual in low critical thinking ability is 66.77 and 70.46, respectively (Table 1) and statistically significant at $\alpha = 0.05$ (Table 2). Inquiry

process cannot function well in contextual classroom because of students' inability to get information and knowledge by themselves through inquiry process. This is different with non-contextual teaching where students with this ability get advantage from lecturers who guide them in writing argumentative assignment.

DISCUSSION AND CONCLUSION

This study shows that overall, students' argumentative writing skills in contextual model are better than those in non-contextual model. But, particularly, students with low critical thinking ability failed to improve their writing ability in contextual than those in non-contextual classroom.

Based on these findings, it can be concluded that students' argumentative writing skills are not only affected by instructional model but also supported by students' critical thinking abilities. Students with high critical thinking ability will be better if we put into practice contextual model, as it follows students with low critical thinking ability may use non-contextual instructions.

Also the finding indicated that all students with difficulties require special attention. These students have special educational needs. Under their guidance, lecturers have to ask students to construct their own knowledge. These students need explicit instruction and fade it up toward contextual instruction. For further research, we need to construct and improve upon teaching strategies which takes care of student with difficulties, especially students who have low critical thinking ability.

Conflict of interests

The authors have not declared any conflict of interests.

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