The Implementation of Team-Based Discovery Learning to Improve Students’ Ability in Writing Research Proposal

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Abstract
Writing research proposal in educational setting is a very complex process involving variety of elements. Consequently, analyzing the complex elements from introduction to data analysis sections in order to yield convinced research proposal writing through reviewing reputable journal articles is worth-contributing. The objectives of this research are to improve students’ ability in generating a research topic from reputable journal articles, developing thesis proposal draft, and writing comprehensive thesis proposal. A classroom action research administered at English Department University of Muhammadiyah Gresik Indonesia is adopted. The results reveal that the implementation of team-based discovery learning may improve students’ ability in generating a research topic, developing research proposal draft and writing comprehensive research proposal. Several suggestions are addressed. First, although the syntax of the team based discovery learning is quite similar to the remaining strategies but it will not work more optimally if it is not followed by relevant sets of guiding questions reflecting the detailed content of each reputable journal article in each meeting. Second, learning innovations activities through intensive writing practices and consultations should be taken into account to foster the steps of discovery learning in group discussion process. Finally, the results of commonalities of strategies may be used as a reference to enhance students’ ability in writing comprehensive research proposal.

Keywords: team-based discovery learning, thesis proposal

1. Introduction
Writing research proposal in educational setting is a very complex process involving variety of elements. Consequently, learning the complex elements from introduction to data analysis sections in order to yield convinced research proposal writing through reviewing reputable journal articles is worth-contributing. As writing research proposal is one of compulsory subjects for EFL students at university level in Indonesia so it becomes hard challenge for every teacher to be able to teach how to write good research proposal. Jensen et all (2004) states that teacher has to spend a lot of time and efforts to edit students’ writing involving language, format, style, idea and many other writing aspects. Before the teachers are able to teach how to write a good research proposal, they have to be able to comprehend variety complexity of genres, patterns and moves of reputable international articles journal to raise students’ awareness on how good researcher write down their research articles (Hyland, 2002, 2007, 2009; Wingate, 2012).

Many researchers have investigated some enormous studies on move analysis, rhetorical patterns, genre writing, genre analysis, writing style and move construction outline toward international journal articles, thesis, dissertation and other scientific writing articles (Young & Allison, 2003; Cresswell, 2000; Swales & Feak, 1994; Wilkinson, 1991; Coffin, 2001; Amirian et al., 2008). Nevertheless, the studies on how to teach students more effectively to scaffold the EFL students to be able to write good research proposal are not well addressed intensively so far. It is not an easy task especially for EFL teachers who teach research proposal writing in thesis writing subject in Indonesia due to many factors from both teachers and students as well.

One of the most influential studies was conducted by Kuo and Chiu (2009) on coaching undergraduate students to write their research proposal. They emphasized on the characteristics of effective mentors (Cramer & Prentice-Dunn, 2007; Rose, 2003; Yamal & Neff, 2007; Cobb et al., 2006) but they did not describe the strategies on how to teach undergraduate students to write their research proposal effectively.
The result of classroom observations the researcher has done, most of the EFL students failed to identify article patterns, paraphrase, and comprehend the content of most of international reputable journal articles. Further, the ability to generate the writing patterns or writer’s move from the articles they learned became another challenging issue. On the other hand, they are demanded to be able to write a comprehensive research proposal from introduction section up to conclusion and suggestion sections.

Based on the above notions, it is essential to transform the implementation of learning activities to address the previous challenging issues. Therefore, the following three research questions emerge in this study.

• How does the implementation of team-based discovery learning improve students’ ability in generating a research topic from reputable journal articles?

• How does the implementation of team-based discovery learning improve students’ ability in developing their research proposal draft?

• How does discovery learning improve students’ ability in writing comprehensive research proposal?

2. Literature Review

2.1 Factors Improving the Quality of Research Proposal Learning

Writing research proposal is one of compulsory subjects taught in all university level as one of the requirements to fulfill their undergraduate program. EFL curriculum at university level offers this subject for the seventh semester students under the thesis writing class. The objective of the thesis writing subject aims at equipping all students to write their research proposal as well as their research articles report before graduating from the university. The average length of time in finishing students’ thesis is approximately more than one year. One of the most crucial factors is the long duration to write down their research thesis. It is in line with Sukarti (1982), Rumini (1992) and Jensen et al. (2004) claimed that the most crucial element in finishing students’ thesis is very time consuming for the students.

Recently, the issue of research writing in Indonesia becomes warm discussions as it involves comprehensive aspects related to the quality of research writing in English as a Foreign Language (EFL) setting. Teacher’s competence, teaching strategy, language mastery, readability level, comprehension problem, paraphrasing ability, review and depth analysis toward articles journal are crucial issues to discuss. First, in addressing teacher’s competence issue in scaffolding students’ ability to improve the quality of writing research proposal, and review of relevant references emerge from this point become the first stepping stone in the literature review. The most influential study conducted by Kuo (2011) and Kuo and Chiu (2009) befalls a significant start for addressing the issue of teacher’s roles in helping EFL undergraduate students in Taiwan write their proposal in more effective ways as well as the characteristic of good mentor in helping students accomplish their research writing. From the study, they found that strong tied interaction between teachers and students appreciably improve students’ ability in accomplishing their undergraduate research writing. Second, teaching strategy is also another crucial issue to be reviewed. In order to uncover this strategy problem in teaching the students to write down their research thesis writing, they also outlined some effective strategies. In this case, the teacher has to be able to narrow down a research topic, formulate research question, write literature reviews and formulate an appropriate research methodology. In an effort to solve this phenomenon, Harahap and Fathiyah (2009) stressed on the use of guided group work was able to boost students’ ability in writing their research more effectively. The strategy also claims to be able to increase students’ motivation to write their research proposal.

Other incoming issues enveloped text readability level, paraphrasing ability and move analysis of the articles. One of the alternative solutions to address the above issues is through simplification strategy toward all articles learned by all team. In order to foster students’ ability in analyzing the content of the pattern of the journal formulation from introduction part until data analysis part, the researcher provides detailed guiding questions in each section. It is aimed at leading and scaffolding them to come up with better comprehension so that they are able to formulate and write research proposal. In connection to simplification, Keshavarz and Atai (2007) stated that simplification provides significant effect in increasing students’ proficiency in comprehending reading text but in contrast, Byrd (2000) suggested that in providing simplification might be very dangerous for the students if the teacher fail to deliver the important element of the texts. The controversies lead the writer to develop simplified articles, which were discussed in the teaching and learning process. Next, leading questions were developed to assist students’ to the right track so that they could formulate a proposal draft generated from the simplified articles prepared.
2.2 Team Based Discovery Learning Strategy

Team-Based Discovery Learning

There are massive agreements among researchers to claim that team based discovery learning is the most effective ways in promoting students’ learning. As one of elements of cooperative learning, team based tries to equip students with the ability to socialize and share knowledge within the group or team. The strategies implemented covers several steps following the step of discovery learning. First, motivating activity phase, where the researcher collects team’s curiosity toward the formulation of writing patterns from each journal article given. In this stage, collections of students’ question from the previous activity are narrowing the topic to be more specific. It is intended to guide the students and team to generate the concepts of how the journal articles formulate their writing patterns. This strategy follow the notion that learning best occurs when the students have certain objective and interest toward the topic they are learning. Secondly, the questions are then given to each team to discuss. It is aimed at discovering the concepts of how articles writer formulates their writing patterns through team discussion. Teacher’s role as a facilitator is more dominant that other roles. Teacher as a facilitator, in this case is designed to guide the students to be able to find the hidden patterns from the articles from introduction up to data analysis section. Related to teacher’s role as a facilitator, it is in line with Mayer (2004) where he compared learning between guided and unguided learning. Form his study, the results revealed that guided learning operate better than the one of unguided learning. Consequently, form this theoretical framework, the researcher implemented discovery learning in the implementation of classroom action research.

3. Methodology

3.1 Research Design and Setting

This study utilizes an action research design to implement team-based strategy to improve students’ ability in generating research topic, developing research draft, and writing comprehensive research proposal through reviewing reputable journal articles. This classroom action research encompasses two cycles, first was a preliminary study and problem identification toward the existing teaching and learning activities, then planning was prepared and departed to action. Finally, reflection was also drawn in order to propose better plan for the second cycle.

3.2 Participants

Thirty participants from two sections of seventh semester of English participated in the study (11 males and 19 females). They had all studied English as the major at University for at least 3.5 years, and most of them had achieved intermediate level of proficiency. From the result of the classroom observations, the researcher made during teaching and learning activities, preliminary data were collected that the students had difficulties in finding a research topic, developing topic into research proposal draft and writing comprehensive research proposal in thesis writing subject.

3.3 Instrument

Research instrument utilized team-based learning monitoring sheet, students’ team portfolios, and individual tests to know the students’ learning improvement results before and after the implementation. Validity monitoring of the team-based monitoring instrument was made four experts during lesson study activities and 3.4 scores were obtained. On the basis of validity theory, it shows 0.4 above the criteria for instrument validity. Consequently, the instrument can be said that it fulfilled the condition of validity. On the other hand, to see the reliability of the instrument, three observers in lesson study activities examined the implementation in the teaching and learning process and look at the consistency of the instruments toward students’ learning activities. Then, reliability coefficient was measure utilizing R coefficient with R = 0.83 was obtained or 0.8 higher than the minimum R where R > 0.75. It means that the instrument fulfilled reliability as well.

Tests validity of the learning improvement results was also administered through a try-out to measure item validity by calculating the correlation of item score and the whole score. Furthermore, for test reliability, a correlation formula r values was administered by using split-half method. The result of tests try out showed that r values were 0.76; 0.75; 0.67; 0.82 and 0.69 meet the validity condition. Finally, internal consistency reliability was measured using Cronbach Alpha formula and it was obtained 0.76.

3.3 Data Collection and Analysis

To obtain the data, pretest and post test were administered to identify students learning improvement results before and after the implementation of actions. The combinations of objective and subjective test were
administered to support the quantitative data. The collected data were in the form of final scores both from the first and the second cycles. To address the research questions, the researcher implemented the use of team-based discovery learning to foster students’ ability in finding a research topic, writing research proposal draft, and writing comprehensive research proposal through reviewing reputable journal articles in each meeting within one semester. Students’ portfolio in each team was also observed carefully to support and enrich the existing data on how their learning improvements were made.

The implementation of actions, which cover four phases namely, planning, action, observation, reflection and its activities of each phase are shown in Table 1.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning (problem identification and alternative solutions)</td>
<td>Individual comprehension toward the content and patterns of journal articles is lower, difficulties in paraphrasing quotations, ran on ideas in writing research proposal. A set of discovery learning step is formulated, preparing guiding question reflecting the detailed patterns of the articles journals, and observation sheet was prepared to monitor students’ learning improvements.</td>
</tr>
<tr>
<td>Action</td>
<td>Implementing team-based discovery steps. There are four main steps. First, motivating activity by triggering all teams’ curiosity toward the writing patterns from journal articles provided. Second, problem identification and formulation from each team from the previous journal articles. Third, team opinion gathering and discovery to solve the defined problems. Fourth, concept generating and formulation from team discussion toward finding research topic, draft development, and writing comprehensive research proposal. All concepts are generated from reputable journal articles.</td>
</tr>
<tr>
<td>Observation</td>
<td>The spotlight of observation directed to students’ learning activities on how they discover a relevant topic from journal articles provided in the suggestion sections of each journal, the way they developed topic into draft, and write their comprehensive research proposal.</td>
</tr>
<tr>
<td>Reflection</td>
<td>The results of observation from each action are drawn to find commonalities of successful strategies in each meeting. Triangulation from different instrument are drawn and reflected to the criteria of success of the actions in each cycle</td>
</tr>
</tbody>
</table>

The analysis of the data was made based on two criteria, which envelop two domains. First, individual improvements are claimed to be successful if they reach minimum mastery level of 80% or score 75. Second, students are claimed to be able to develop draft and write comprehensive research proposal if 80% students reach the score of 75.

4. Results

The action of the study was executed within two cycles, where seven meetings in each cycles comprised four phases namely, planning, action, observation and reflection.

4.1 The Implementation of Team-Based Discovery in Learning to Improve Students’ Ability in Formulating, Developing and Writing Comprehensive Research Proposal

4.1.1 The First Cycle

As stated before, in this first cycle, the researcher employs four phases, which cover planning, action, observation, and reflection.

In planning phase, it is intended to prepare learning implementation covering, lesson plan, students’ worksheets consisting detail guiding questions generated from each journal articles, six international journal articles and one national accredited journal article. The core competence and standard of competence of this subject is formulated to comprehend the move of journal articles formulation and to determine the patterns of reputable journal articles. Moreover, indicator formulation was also made entailed the core competence and standard of competence that should be attained by the students. First, it is hoped that at the end of the course, the students are able to identify and analyze writing patterns from selected reputable journal articles. Second, to formulate, develop and write research proposal from drafting up to more comprehensive proposal.
In action phase, the implementation is divided into three parts namely, pre-teaching, whilst-teaching and post-teaching activities. In pre-teaching activities, the researcher accumulated each team’s curiosity related to the content of the journal articles given previously. Each team was assigned to formulate several detailed questions from each journal article.

In whilst-teaching activity, the teacher and the students arrange the list of questions into introduction up to research methodology sections. It is aimed at organizing the patterns of journal articles formulation. In this stage, team discussion started to collect students’ idea from each team toward the problems they formulated before.

The following activity is to generate or find a relevant research topic through team discussion activity and formulate into a good research topic formulation. In this occasion, students reviewed conclusion and suggestion sections of each journal to find a research proposal from the journal in their team. Moreover, after each team able to find a research topic, they were assigned to develop the topic into a research proposal draft from introduction up to data analysis section by answering students’ worksheet they wrote before in problem formulation activity. In addition, they were also assigned the similar thing to write down more comprehensive research proposal by answering the question from students’ worksheet as well. Next, feedback was then overviewed to see students’ improvement and knowledge gain at the post teaching activity.

In observation phase, observation was conducted by three observers to see the implementation of the strategy relying on discovery learning run down and students’ learning activities and improvement on formulating research topic, developing research draft and writing comprehensive research proposal. At this phase, there were only three groups out of six performed better. It could be seen from their participations, ability to answer questions and from team works writing development results. The rests were still had some problems related to draft development and comprehensive proposal writing as their idea was too broad or sometime irrelevant from their research topic. Next, their participation in team discussion was not optimum as well because the content of the international journal articles were very difficult for them.

At reflection phase, students’ score in answering questions from each journal articles were then analyzed. The students’ total scores calculated were less satisfactory because from thirty students the average score achieved 75% with average score 75 below the criteria of success, which was determined into 80% with the average score 75.

4.1.2 The Second Cycle

In order to improve the strategies of in the first cycles, the second cycle was implemented some improvements.

In planning phase in this second cycle was made based on some shortcomings from the first cycle. The improvement tried to highlight the difficulty level of international journal articles content by doing simplification and providing glossary toward the unfamiliar terms in the articles. Students’ worksheet was also designed in more detail and concise. Discovery learning steps were still the same as the first cycle did.

In action phase, the implementation was also divided into three parts namely, pre-teaching, whilst-teaching and post-teaching activities. In pre-teaching activities, the researcher assisted each team to rewrite questions based on simplified journal articles with its glossary. Therefore, they did not necessary to spend much time in comprehending the content of the journal articles.

In whilst-teaching activity, the teacher and the students arranged the list of questions again and discussed whether each question item had already reflected each important point of the articles. It is aimed at both generating more clear concepts from the simplified journal as well as defining more specific guide to finish their projects. Discussion was implemented as usual following the same steps of discovery learning just like at the first cycle to solve the formulated questions. Then, more practice was given to each team dealing with drafting research topic and writing comprehensive research proposal.

In observation phase, three observers did similar roles as the first cycle to see the implementation of the strategy relying on discovery learning run down and students’ learning activities and improvement on formulating research topic, developing research draft and writing comprehensive research proposal. At this phase, all teams consisting six teams performed better in learning process. Their participation also significantly increased due to simplified questions. They could find research topic more easily, develop draft and write comprehensive proposal better.

At reflection phase, students’ score in answering questions from each journal articles were then analyzed. The students’ total scores calculated were satisfactory because from thirty students the average score achieved 90% with average score 85.8 above the criteria of success.
From the improvement results of the second cycle, it could be stated that learning activity would not be continued into the upcoming cycles, since the result fulfilled the predetermined criteria of success. The improvement result of the tests will be presented in Table 2.

Table 2. Comparison of the test results between the first and the second cycles

<table>
<thead>
<tr>
<th>Students</th>
<th>Score of Writing Test</th>
<th>Score of Writing Test</th>
<th>Improvement</th>
<th>%</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Cycle-1</td>
<td>Cycle-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>73</td>
<td>90</td>
<td>17</td>
<td>23.3</td>
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<td>2.</td>
<td>80</td>
<td>90</td>
<td>10</td>
<td>12.5</td>
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<tr>
<td>3.</td>
<td>80</td>
<td>90</td>
<td>10</td>
<td>12.5</td>
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<tr>
<td>4.</td>
<td>73</td>
<td>80</td>
<td>7</td>
<td>9.6</td>
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<tr>
<td>5.</td>
<td>80</td>
<td>90</td>
<td>10</td>
<td>12.5</td>
</tr>
<tr>
<td>6.</td>
<td>80</td>
<td>94</td>
<td>14</td>
<td>17.5</td>
</tr>
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<td>7.</td>
<td>80</td>
<td>90</td>
<td>10</td>
<td>12.5</td>
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<td>8.</td>
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<td>12.5</td>
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<tr>
<td>9.</td>
<td>70</td>
<td>85</td>
<td>15</td>
<td>21.4</td>
</tr>
<tr>
<td>10.</td>
<td>75</td>
<td>80</td>
<td>5</td>
<td>6.7</td>
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<td>11.</td>
<td>65</td>
<td>85</td>
<td>20</td>
<td>30.8</td>
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<tr>
<td>12.</td>
<td>65</td>
<td>80</td>
<td>15</td>
<td>23.1</td>
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<tr>
<td>13.</td>
<td>80</td>
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<td>16.</td>
<td>76</td>
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<td>27.</td>
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<td>28.</td>
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<td>30.</td>
<td>75</td>
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</table>

The result of the test at the end of the first and second cycles revealed a significant improvement which none obtained any decreased individual score. The percentage of the improvement varied from the lowest score 6.3% to the highest score 30.8% with the average of score 16.5%. This table also explained that all students show improvement in the score. The table also describes that the students who has higher score at the first cycle tend to improve smaller than those who achieve lower in the first cycle tend to perform higher in the second cycle.

After comparing the score from the first and the second cycle, justification is then made. From the first cycle, the
students total scores calculated were just 36.7% who achieved the criteria of success. Meanwhile the rest 63.3% remained under the predetermined criteria of success. On the other hand, on the second cycle the students' total scores calculated were more satisfactory because from thirty students the average score achieved 90% with average score 85.8 above the criteria of success.

5. Discussion

The implementation of discovery learning may improve students’ ability in formulating research topic, developing research topic into draft and develop the draft into comprehensive proposal. The result of the study showed that the test done on the first cycle did not match the criteria of success but significant improvement and increase occurred in the second. It happened where in the first cycle most of the students in each team tended to rely on the meaning of the unfamiliar words from the journal articles provided. Another obstacle is the quality of questions produced by the students in each team to reflect their curiosity were not detail and failed in representing each fundamental pattern from the articles journal. Next, the writing patterns from journal could not be drawn effectively.

On the basis of the above phenomena, the researcher creates some attempt to simplify the text of the articles journal given to the students in each team. Glossary of the unfamiliar word was also provided to facilitate better learning for the students. Discussion on simplification strategies implemented to EFL students in Japan by Browne (1996) it is very clear that simplification strategy could enhance students comprehension toward difficult texts. Moreover, Carrell (1998) and Nation (1990) noted that there is significant influence between word meaning and the ability to comprehend passages. The studies revealed that glossing is very useful activities to scaffold the students to develop reading ability. Thus, the strategies of simplification and availability of glossary for unfamiliar word confirm the previous studies.

Dealing with the quality of questions or problems formulated by the students in implementing one of some steps of discovery learning, the researcher found that on the first cycles is not detail and it failed to represent each pattern of the articles journal. Toward this issue, the researcher assist the students to construct their problem in each team into more well-constructed that more detail and reflect each pattern from each pattern of the articles journal. In fact, in the second cycle, it could improve students' ability in understanding the content of the journal better and it possibly helped them develop their comprehensive proposal writing better that before. Hence, an awareness of students’ problem becomes a crucial factor for the teacher. It is in line with Cramer and Prentice-Dunn (2007) and Cobb et al. (2006) stated that an effective teacher has to understand students’ problems. Further, Gutterman (2007) strengthened previous idea that relationship between teacher and students significantly influence students’ ability in writing their research proposal.

In connection to guiding questions, it is found that it can help students to be able to produce good writing. Kuo (2011) found that specific guidelines in tutoring EFL students could enhance students’ ability in writing their research articles. Consequently, the more detailed the guidelines the better the students’ improvement in writing their research would be. Then, this study solely confirms the previous research finding.

Another discussion issue emerges from this study is the issue of discovery learning activities. As stated in the research finding that the researcher employs discovery learning in team-based formulation is that writing research proposal is not an easy task as it involves many complex element and process. Those complex elements and processes or patterns in journal articles are not shown explicitly so the initiation of discovery learning is implemented through cooperative learning. Therefore, the students may share their ideas and learn together. This notion is in line with the idea of Svinicki (1998) which stated advantages of discovery learning. Further, he noted that discovery learning is more meaningful as it employs individual associations as a core of comprehension.

From the above discussion, it is revealed that some commonalities of strategies in this study offered fruitful contributions toward the improvement of students’ ability in writing their research proposal using a classroom action research.

6. Conclusion and Suggestion

Two conclusions are drawn based on the analysis and interpretation of the study:

1) The implementation of team-based discovery learning was very effective in improving students’ ability to formulate research topic, develop research proposal draft, and write comprehensive research proposal. It is shown by the test results made on the first and second cycle from 6.3% to 30.8% with the average improvement was 16.5%.

2) The implementation of team-based discovery learning performed best if it the teacher did simplification to diminish the difficulty level of the article journal given to the students.
From the result of this research, three suggestions are offered. First, team-based discovery learning operates more optimally if it is followed by relevant sets of detail guiding questions reflecting the detailed content of each reputable journal articles for each group. Second, learning innovations activities should be taken into account to foster the steps of discovery learning in group discussion process. Finally, the results of commonalities of strategies may be used as a reference to enhance students’ ability in writing comprehensive research proposal.

References


dan Kebudayaan.


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