A Study of Electronic Plagiarism Detection as a Tool for Learning Summary Writing

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Abstract
The aim of this study was to explore summary writing processes of sixty Taiwanese freshmen that enrolled in an EFL reading and writing courses. This study examined the difference of participants’ summarized texts and original source texts. The design of the study had one group with traditional writing instruction and the other with plagiarism detection software in writing instruction environment. Within eighteen weeks, the students read and summarized reading materials what they learned. Teacher and peers’ feedbacks were given in two different writing instruction settings. A pretest–posttest experimental design was implemented. Instruments of the study included students’ perception questionnaires and reflective journals of using plagiarism detection software. The results indicated that students’ summary writing tasks did not show significant differences between original source texts and summarized texts after both groups received summary writing instruction. On the other hand, students commented positively that the use of Turnitin facilitated them to understand their errors from teachers’ and peers’ feedback. The implications of the intervention that used plagiarism detection software in L2 writing class were demonstrated.

Keywords: plagiarism detection software; summary writing; paraphrasing; feedback; Turnitin
Introduction

In the language learning process, summary writing is examined by student’s comprehending main ideas and supporting ideas. Many scholars suggest that summary writing indeed help students’ vocabulary knowledge, enhance their critical thinking abilities and reading comprehension (Hidi & Anderson, 1986; Taylor & Beach, 1984). The purpose of writing a summary is that writers convey the main ideas explicitly and clearly for readers (Hidi & Anderson, 1986).

Summary writing provides students with practical experience in searching for meaning and communicating that meaning. However, surveys of academic writing tasks in university surroundings with English instruction show that students tend to draw from source texts when they write homework (Carson, 2001). Therefore, it is important to instruct summary writing skills when students learn to write academic writing (B. Kim, 2001; Langan, 1993). In the second language-learning context, students may have difficulty of dealing with complexities of recognition, schemata, metacognition, and other mental processes when they compose a summary.

The second issue of plagiarism has attracted considerable attention in university level in the recent years. Plagiarism is a concern that “students taking the words of others and passing them off as their own in their coursework assignments” (Hayes & Jintrona, 2005). Students are not aware of the seriousness of plagiarism and teachers do not announce or remind students’ academic misconduct. Even though plagiarism can be nothing, to a few words, to an entire article, for students, plagiarism is regarded as violations of intellectual property rights. There is growing concern among researchers and teachers regarding the effect of plagiarism (Larkham & Manns, 2002). Much research has been conducted to determine the extent of the problem (Walker, 2010; Williams, 2008). In addition, how teachers measure students’ plagiarism has been addressed in the recent years. Many studies focused on student self-reporting examination of their own plagiarizing behavior to evaluate (Brown, 1995; Rakovski & Levy, 2007). Still, there has been much debate that using self-reporting is problematic (Park, 2003; Scanlon & Neumann, 2002).

Despite of the challenging nature of measuring students’ plagiarism, current research on plagiarism has been embarked on plagiarism detection tools (Larkham & Manns, 2002; Royce, 2003). Many high schools and universities are using detection tool to prevent students’ plagiarism. The Turnitin online plagiarism detection software is prevalent with educators and teachers (Rolfe, 2011; Stapleton, 2012; Youmans, 2011). However, the relevant empirical data in second language (L2) research on plagiarism on an academic writing is scarce. It can only be guessed that L2 students lack of enough instruction and practice when they compose a summary. The purpose of this study, therefore, is to examine the effects of plagiarism detection tool on summary writing performance. More specifically, the study aims to answer the following questions:
1. What are the differences between original source texts and summarized texts after L2 writers receive summary writing instruction?
2. What are students’ perceptions of using the electronic plagiarism software, Turnitin?

Literature Review

The nature of summary

There are a variety of definitions of summary (Glendinning & Holmstrom, 1992; Langan, 1993; Whol, 1978). Langan defines a summary as “the reduction of a large amount of
information to its most important points.” Glendinning and Holmstrom (1992) also define summary as “identifying what is important in a text depends on a good sampling but it also depends on knowing what to look for the clues which help us to identify the important points and to separate them form the less important details.” Those definitions of summary conclude that summary writers have to omit some details, or at least write it more concisely. In other words, the various definitions suggest that a summary is a brief statement that condenses that information and reflects the central ideas of the discourse (Johnson, 1983).

According to Anderson and Hidi (1986), summary writing is different from other composing tasks. A summary writer should have already planned and generated the main ideas and related details, whereas other composing tasks consider content, structure, core ideas and related details and the use of transitional words. Moreover, Anderson and Hidi also proposed the processes of summary writing. The first process is selection process that learners have to decide what information to delete or keep when they are asked to give a summary. The second process is reduction process that learners have to use general ideas to substitute the details when they are asked to give a summary. Also, learners have to write a summary in their own words and ensure not to interpret inappropriately.

**Summary writing strategies**

Other scholars have different rules or strategies regarding summary writing. Kintch and van Dijk (1978) argue that deletion, generation, and construction are the three basic operations of summary writing. Johnson (1983) proposed six rules of summary writing: (1) comprehending individual propositions; (2) establishing connections between propositions; (3) identifying the constituent structure of a story; (4) remembering the information in a story; (5) selecting the information to be demonstrated in a summary; (6) being concise and coherent. Coffman (1994) focuses three strategies when writing a summary: reproduction, transformation and intrusion. He defines a reproduction that writers paraphrase a unit of original source content. A transformation is that writers combine different major content units from the original source content in the summary. An intrusion is a notion that readers’ schema play an important role when they write a summary. In summary, these definitions of summary draw the same conclusions that readers have to select the important information, delete unimportant information, and then condense all major content units. Finally, readers have to integrate and organize these ideas and then write a summary in their own words.

**Studies of Summary Writing**

Summary writing is regarded as a measure of reading comprehension (Carrell, 1990; A. M. Johns, 1986). Many teachers and scholars believe that summary writing is helpful for learners in terms of improving reading and writing abilities in L1 area (Garner, 1982; Taylor, 1984; Kennedy, 1985). In the past decade, summary writing research in the second language learning has indicated that writing a summary indeed improved learners’ reading comprehension. (S. A. Kim, 2001; Lin & Hsu, 2005; Tien, 2004; Vongpumivitch, 2007).

Kim (2001) investigates 70 Korean EFL students' summary writing skills. They write two expository text without training of summary writing. The results show that text difficulty affects students’ writing behavior. Besides, students use more selection and transformation rules. Finally, the findings indicate that these Korean EFL college students do not employ appropriate writing summary skills and they need more training about summarization skills.

In a recent study, Keck (2006) examine the use of paraphrase in summary writing between L1 and L2 academic writers. This study analyzes two groups of students’ use of paraphrasing strategies in the summary tasks and the results show that L1 writers tend to copy
the original texts. In addition, L2 writers do not use more paraphrasing strategies than L1 writers. Keck assumes that L2 writers lack sufficient language proficiency to produce a summary. The results confirm some scholars’ findings that learners’ linguistic competence is a crucial factor when employing paraphrase strategy use in writing a summary. (A. Johns & Mayes, 1990; Shi, 2004)

**Plagiarism Detection**

With the emergence of plagiarism detection software such as PlagiServe, Moss, and Turnitin, teachers can detect students’ plagiarized tasks easier. Many schools employ the popular plagiarism detection software platform - Turnitin. Studies on Turnitin have been growing recently (Bretag & Mahmud, 2009; Ledwith & Risquez, 2008; Rolfe, 2011). Some scholars point out that using Turnitin to check students’ plagiarized sentences does improve their writing when they revise it (Ledwith & Risquez, 2008; Rolfe, 2011), whereas others argue that students’ writing quality do not improve when using Turnitin as a learning tool (Biggam & McCann, 2010; Walker, 2010).

Despite a controversy of using Turnitin in class, teachers and researchers can use this software to facilitate students’ writing skills and help them to become more aware of plagiarism. This empirical study is more concerned about how teachers can implement Turnitin as a tool for teaching and giving feedbacks.

**Method**

This study was designed by using Turnitin as the primer-researching tool. During the summering writing learning process, college students were given proper assistance and feedback promptly. Through the research procedure, researchers wanted to discover and discuss the cognitive and behavioral performance that consists with the students’ summary writing processes. Our goal of this study was to improve students’ summary writing ability in order to have realistic practice in academic writing ethics. The research questions were as follows:

1. What are the differences between original source texts and summarized texts after L2 writers receive summary writing instruction?
2. What are students’ perceptions of using the electronic plagiarism software, Turnitin?

**Participants**

Participants were selected from one freshman English writing course of a private university in southern Taiwan. Their ages were between 18 and 20 year old. Participants studied English for at least eight years. This particular course was a required one for freshman with three credit hours per week. The course was divided into two groups. One of these groups was the experimental group. Participants in this group were given Turnitin as a summary writing environment. The other group was the control group that proceeds with traditional class lecture without using Turnitin. Thirty students were in each group and a total of sixty students participated this study. Most participants did not have summary writing training experience in their high school English classes.

**Reading Materials**

There were twenty articles used for reading materials. Those articles were selected from reading comprehension textbooks, “Reading Keys 3”. There were eight reading themes with ten articles, which were four to six hundred words in length. They were appropriate reading materials for intermediate readers such as participants in our study. The content of those articles were authentic with different topics such as “Life with Internet,” “Reading to People,” “A mysterious World,” and “Playing with nature.” Those reading material could provide with
students different writing styles and further understanding with the authors’ presentation to their thoughts. To sum up, topics, content, and length of the selected articles suitable with freshman students’ English capability. Therefore, in the research design, both experimental and control group were using articles fromm this textbook for a whole academic year.

**Summary Writing Strategies**

While teaching summary writing during the semesters, students had to study writing strategies. Researchers generalized the development of those strategies by students as the follows:

**Table 1. Reading strategies**

<table>
<thead>
<tr>
<th>Type</th>
<th>Summary writing strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quotation</td>
<td>Use quotation marks to cite another’s verbatim and cite the source</td>
</tr>
<tr>
<td>Thorough rewriting</td>
<td>Paraphrase the source text by using one’s words to express the ideas of another’s work and cite the source</td>
</tr>
<tr>
<td>Reordering</td>
<td>Paraphrase by reordering words or phrases of source text and cite the source</td>
</tr>
<tr>
<td>Using synonyms</td>
<td>Paraphrase by substituting synonyms for words of source texts and cite the source</td>
</tr>
<tr>
<td>Inserting</td>
<td>Paraphrase by inserting words or phrases of source texts and cite the source</td>
</tr>
<tr>
<td>Deleting</td>
<td>Paraphrase by deleting words from source texts and cite the source</td>
</tr>
<tr>
<td>Syntactic change</td>
<td>Paraphrase by changing the syntax of the source texts, verbatim, and cite the source</td>
</tr>
<tr>
<td>Combing</td>
<td>Paraphrase by combing sentences from different source texts, verbatim, and the source</td>
</tr>
<tr>
<td>Copy verbatim</td>
<td>Copy, verbatim, from source texts and cite the source</td>
</tr>
</tbody>
</table>

Source: Campbell, 1990; Keck, 2006; Pecorari, 2003; Shi, 2004

**“Turnitin” anti-plagiarism online system**

Participants of the experimental group were given “Turnitin” accounts for submitting their writings to the system in order to determine the extent of plagiarizing the original text. Barrie established “Turnitin.com” and developed the online anti-plagiarism system in 1990 by applying studies of development of brain waves from neuroscience. Once the teacher applied students’ writings into the system, the comparison of originality and links to the source can be done by one click.

**Questionnaire**

The questionnaire was adapted from Betts, Bostock, Elder, and Trueman (2012) and modified by the researcher that given to participants to investigate their recognition on plagiarism and attitudes on summary writing editing procedures. The questionnaire was divided into two sections accordingly.

**Research Design**

This study was consisted with one experimental group and another control group. These two groups were treated differently during the span of our research according to their learning methods. The whole process was for at least three months.

The experimental group received traditional summary writing instructions in classrooms, as well as using Turnitin to facilitate students’ summary writing and the teacher’s feedback. Multimedia language learning laboratories with Windows XP based personal computers were utilized for using Turnitin. It was one student per seat so students can receive the teacher’s feedback individually.

On the other hand, the control group received only traditional summary writing instructions and activities. The teacher gave paper-based feedback alone with students’ summary writings plus face-to-face feedbacks.
Research Procedure

Both experimental and control group received the same reading material and training; however, the summary writing instructions were different. Both groups were given summary writing pre-test.

The experimental group went to multimedia language learning laboratories and used Turnitin for summary writing activities for six times. Participants in this group received traditional summary writing instructions for 12 weeks and wrote summaries for six times. In addition to the feedbacks in Turnitin, the teacher met students and gave feedbacks in person one time for the last writing, which was treated as the post-test.

At the same time, the control group completed the pretest summary writing, but participants did not use Turnitin activities. Participants in this group also received a face-to-face meeting with the teacher and the teacher gave feedbacks to participants.

Through the procedures of this research, the researcher was able to determine if Turnitin was helpful to participants after all these activities such as less word-by-word copying and more strategy usage to improve their summary writing capability. The post-test was given in a different article than the pre-test. The main reason for that was to reduce the practice effects.

Data analysis

There were five components of this study and each component is designed for different learning process.

Pre-test and post-test of summary writing

This part of data was analyzed by using Turnitin anti-plagiarism system to detect the percentage of copying between pre-test and post-test. According to the result, the researcher could decide the cut-off point, 30 percent, and discussed students’ extent of plagiarism (Rolfe, 2011).

Reflective journal

Reflective journals from participants and the teacher were analyzed by using qualitative methods. There were suggested questions for participants to reflect. In this way, the fracturing of text data and the relationship between patterns was constructed and given new meanings. This transformation process was often an abstraction one (Liu, 2006). The suggested questions are as follows:

1. What do your plan ahead in doing your summary writing activity?
2. What kind of difficulties do you have while you are doing summary writing activity?
3. How would you evaluate your learning progress?
4. How would you motivate yourself to make progress?
5. What enabled you gain most from doing summary writing activity?
6. What would you do differently if you have more time?
7. Using open-ended question to ask students: On the left side of the paper, the students could write down: What I learned? On the right side of the paper, students could write down: How I learned it?

For the interview questionnaire, students are suggested for the following questions that are modified from Rolfe (2011).

1. How was your experience of using Turnitin / summary writing instruction?
2. Was there enough training?
3. Did you look at the originality report / original summary writing assignment?
4. Did it help you improve your work?
5. Did you change your work after seeing the report?
6. Are academic offences a problem at university?
7. Is the university procedure clear?
8. Should all work be submitted to Turnitin to deter plagiarism?

**Summary writing strategies usage**

By analyzing which strategy was most frequently used, data was evaluated by the researcher. The evaluation of the summary writing used worksheet as the standard. The researcher worked with other co-researchers to complete this task. As described in the literature section, replacing segmentation and unimportant information with condensed, complete, consistent, accurate, and untestable content were the strategies that participants use.

**Questionnaire**

Two of the research groups were given this questionnaire for investigating if there any participants’ attitude difference on plagiarism before and after the summary writing procedure. Data was analyzed by using descriptive statistics.

**Results and Discussion**

1. What are the differences between original source texts and summarized texts after they received summary writing instruction?

   For two group students submitted during the teaching semester, the amount of text Turnitin identified as being similar ranged from 0 to 92 per cent. In the beginning of the conducting this research, two group of students’ first summary writing (pre-test) revealed 0%.

   (See Table 2). There were no instances of matching text identified in the similarity reports in experimental and control groups. The results showed false-positive detections of potentially plagiarized material an average of 0 percent of pretest. One possible cause for this incident is that the software may misidentify material. From the instructor’s observation, it was difficult for two groups of students who wrote excellent summary writing tasks before receiving the instruction.

   In the end of semester, two groups of students were asked to read the same article and write a summary. Control groups (M=39.8%) performed better than experimental group (M=26.2%). As for the experimental group, despite the use of Turnitin, it still showed the high rate of plagiarism. It was assumed that experimental group using Turnitin had no positive impact on their writing performance. The findings of this research do not support the perspective that Turnitin is not a very practical detection plagiarism tool. Further, there were a number of false identified where students wrote a common phrase or keywords included appropriately referenced quotes.

<table>
<thead>
<tr>
<th>Table 2. Scores of Similarity Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
</tr>
<tr>
<td>Experimental</td>
</tr>
<tr>
<td>Control</td>
</tr>
</tbody>
</table>

2. What are students’ perceptions of using Turnitin?

   The students’ experiences of using Turnitin were evaluated through a questionnaire, to which 30 students responded (see Table 2).
Table 3. Number of positive and negative student responses regarding the use of Turnitin

<table>
<thead>
<tr>
<th>Question</th>
<th>Positive response</th>
<th>Negative response</th>
</tr>
</thead>
<tbody>
<tr>
<td>I found Turnitin very easy to use</td>
<td>28</td>
<td>2</td>
</tr>
<tr>
<td>I understand the benefits of using Turnitin</td>
<td>25</td>
<td>5</td>
</tr>
<tr>
<td>I think that Turnitin is very effective in detecting plagiarism.</td>
<td>26</td>
<td>4</td>
</tr>
<tr>
<td>Turnitin is a very effective way of submitting and correcting assignment.</td>
<td>26</td>
<td>4</td>
</tr>
<tr>
<td>Using Turnitin made me much of aware of plagiarism.</td>
<td>28</td>
<td>2</td>
</tr>
<tr>
<td>Using Turnitin made me feel satisfied that the anonymity of the peer assessment process would be assured.</td>
<td>28</td>
<td>2</td>
</tr>
<tr>
<td>Using Turnitin was better than correcting paper versions of assignments.</td>
<td>27</td>
<td>3</td>
</tr>
<tr>
<td>Using Turnitin GradeMark (teacher’s feedback) was easy to understand my errors.</td>
<td>28</td>
<td>2</td>
</tr>
<tr>
<td>Using Turnitin GradeMark (teacher’s feedback) was helpful to me.</td>
<td>27</td>
<td>3</td>
</tr>
<tr>
<td>Using Turnitin Grade Mark (rubric) was helpful to make my writing better.</td>
<td>28</td>
<td>2</td>
</tr>
</tbody>
</table>

Positive response in the number of students answering agree or strongly agree; negative response is the number answering neutral, disagree or strongly disagree.

The students found using Turnitin to be a special and positive experience. The majority agreed that Turnitin was a useful platform. Moreover, they thought that their summary tasks to gain teachers’ feedback did really improve their writing. However, some students complained its inconvenience. Students suggested that the speed of Turnitin was slow and the technical problem of getting access was annoying. The following excerpts were students’ positive and negative feedbacks when using Turnitin.

Positive Feedback

One is I can understand what percentage I write like the original text. (AB22)
I can check how similar my summary is with the original text. I can check my grade online. (AB12).

Turnitin is useful and using the GradeMark is easy to understand (AB10).
I realized that I should pay more attention in the sentence and grammar (AB18).

Negative Feedback

Loading is a little slow. Sometimes it can’t open (AB28).
Get on Turnitin website is slow from school (AB12).
When I use Turnitin to finish my homework, I can’t count the words of my summary (A09).
Sometimes the words are too small (AB11).

When asked about using Turnitin more detailed, students suggested that teacher’s feedback is necessary. Here are some excerpts from students’ comments:

I can check my mistake on my summary (AB02).
It can let me edit summary immediately after getting the feedback (AB13).
I think we should practice more by using Turnitin (AB29).
The system operates to divide the ability into many pieces which make students feel easy to overcome their problems (AB09).
Overall, the findings confirmed that students became more aware of plagiarism in their subsequent writing tasks (Walker, 2010). First, students evaluated summary writing experience in using Turnitin positively. For example, the majority of students agreed or strongly agreed that using Turnitin helped them to correct assignments. Students elaborated that using Turnitin could review each other’s writing task in peer reviewing process. Some students referred that anonymity was great because they were embarrassed to show their tasks in front of their classmates. Second, students commented that the use of Turnitin helped them to understand their errors via teachers’ feedback, corrections, and rubric. The finding confirmed that teachers or tutors should help students to interpret the reports generated by Turnitin (Betts et al., 2012). It was useless for teachers to ask students to view their originality report in Turnitin.

Conclusion

The results of this research indicated that students’ summary writing tasks did not show significant differences between original source texts and summarized texts after they received summary writing instruction. More specifically, no instances of matching text identified in the similarity reports in both experimental and control groups. Teachers should caution the high false-positive detection rate; therefore, training or workshop is essential for teachers to avoid making negative assumptions from students’ plagiarized tasks. It is suggested that teachers could not rely on the percentage number in the similarity and they should review and interpret the results for the intentional cases of plagiarism. Wasley (2008) reported that “if preventing cheating depends on faculty keeping up with technology… we lose.” Turnitin could serve a tool and would not substitute for human communication and engagement.

The data from students’ questionnaire and reflective journal provided a richer understanding that students evaluated summary writing experience in using Turnitin positively. Also, students commented that the use of Turnitin facilitated them to understand their errors from teachers’ and peers’ feedback.

In conclusion, the findings were encouraging for teachers to use Turnitin as a means of communication between participants in the process of summary writing activities. The awareness of plagiarism was increasing among students; however, the plagiarism did not decrease after they receive the summary writing instructions by using Turnitin. It is suggested that students still needed to learn more about academic writing skills such as citation, referencing, and paraphrasing.

Future research is required to bring students’ writing skill to proper level before proceeding summary activities. When using Turnitin, teachers and students need to be trained for interpreting the similarity reports’ scores in a meaningful way. In addition, the future studies need to pay more attention on the design of intervention with the use of Turnitin. The plagiarism detection tool cannot be employed solely for evaluating students’ summary writing performance.

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