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## **Chinese University Students' Perceptions of the Use and Effectiveness of Turnitin in EAP Writing**

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### **Abstract**

Student plagiarism has been prevalent in academic discourse. This paper investigates through a questionnaire and interviews the use and effectiveness of Turnitin, a major plagiarism detection system, in Chinese university students' EAP writing in a Sino-foreign joint institute in Shanghai. The study finds except for its online marking tool GradeMark, Turnitin has been well-received by most students. Two most welcomed features are the similarity report and its convenience in submitting assignments. Besides, most students perceived Turnitin as an effective tool in reflecting and reducing plagiarism in their writing. However, the study also shows although students' general understanding of the Western concept of plagiarism has been greatly improved, some students may still have misconceptions, and lack sufficient knowledge of what constitutes plagiarism, which can be a major factor contributing to the high similarity rate in their writing on Turnitin. Based on these findings, the study puts forward suggestions on how to reduce student plagiarism in EAP writing, in particular pointing out the introduction of Turnitin in EAP writing instruction in EFL contexts may help to cut down plagiarism.

### **Keywords**

EAP writing, Turnitin, plagiarism

## **1 Introduction**

Student plagiarism in academic writing has remained a worldwide problem. During the past two decades, much attention has been drawn to the topic, among which a number of studies have addressed EFL/ESL students (e.g. Chandrasoma, Thompson & Pennycook, 2004; Gu & Brooks, 2008; Li & Casanave, 2012). Some of them (e.g. Howard, 1992; Deckert, 1993; Pecorari, 2003) reported a general tendency among EFL students, including Chinese students, to “engage in or fail to recognize textual borrowing practices that are usually regarded as transgressive intertextuality in Anglo-American academia” (Hu & Lei, 2016, p. 107). Researchers have examined the issue from various perspectives, including cultural, developmental, disciplinary, and integrated perspectives (Pennycook, 1996; Howard, 1995; Flowerdew & Li, 2007a; Hu & Lei, 2012). Among all the others, EFL students' knowledge of and attitudes toward plagiarism seems an essential factor in understanding the issue.

To prevent student plagiarism, one possible solution would be plagiarism detection systems. In many Western universities, plagiarism detection systems for English academic writing are commonly used, the most popular of which is Turnitin (Gabriel, 2010). Developed by iParadigms in 1998, the system claims to have a databank consisting of more than 70 billion web pages, one billion student papers and millions of top journal articles (Turnitin, 2020). Through its OriginalityCheck, Turnitin can quickly detect the matching content in students' writing against its database, and comes up with a similarity report (also called "an originality report"), which includes both an overall percentage of similarity that a paper has with all the other sources in the Turnitin database, and an individual percentage of similarity for the matching text with each source it borrows from. It was reported that in some American colleges and universities, students' unoriginal writing had decreased by 39% after five years' use of the system (Turnitin, 2014).

Though most widely used in Western educational settings, Turnitin is not as popular in EFL contexts. Thus, the use and effectiveness of such a system in EFL contexts like China is much under-researched. To fill in the gap and find a possible way to reduce plagiarism, this study employs a mixed method to investigate how Chinese university students perceive plagiarism, what is their knowledge of the Western concept of plagiarism and how they view the use and effectiveness of Turnitin in a Sino-foreign joint institute in Shanghai. The study provides input from Chinese university students on the applicability of Turnitin in EFL settings, and it may shed new light on how to prevent EFL student plagiarism in English academic writing.

## 2 Previous Research on Plagiarism

The literature on plagiarism in ESL writing has mainly covered three topics: the definitions, conceptions and perceptions of plagiarism, the causes of and solutions to the issue. Plagiarism is a complex concept with numerous definitions, which has made it a difficult construct for ESL/EFL students to grasp. Based on the literature, many factors contribute to ESL/EFL student plagiarism, including cultural, linguistic, educational, and attitudinal factors, etc (Lund, 2004; Amsberry, 2009; Erkaya, 2009). Among all these factors, understanding and knowledge of plagiarism could be a critical one in examining the issue. As pointed out by Ali, Ismail, & Cheat (2012, p. 610) and Erkaya (2009, p. 91), lack of understanding or sufficient knowledge of plagiarism can be a major factor contributing to ESL/EFL student plagiarism. Therefore, it is necessary to investigate ESL/EFL students' understanding and knowledge of the concept when trying to understand their writing behavior. Besides a lack of understanding or knowledge, attitude could be another important factor in understanding ESL/EFL student plagiarism. This could refer to both individual attitudes and cultural attitudes. In addition to individual attitudes, some studies attributed ESL/EFL student plagiarism to cultural differences in attitude towards plagiarism, suggesting in some cultures, including Chinese culture, plagiarism was acceptable and students tended not to condemn plagiarism (Sowden, 2005; Deckert, 1993). Therefore, it is important to investigate how ESL/EFL students perceive plagiarism. As for the solutions to plagiarism, educational and punitive measures are often taken as common measures to prevent plagiarism. Turnitin, a plagiarism detection tool which can be used in both educational and punitive contexts, has received much attention from researchers. For the purpose of this study, a brief review on the definitions of plagiarism, and studies on Chinese university students' knowledge of and attitudes toward plagiarism as well as studies on the use and effectiveness of Turnitin will be provided in the following section.

### 2.1 Definitions of plagiarism

Plagiarism has been widely accepted as an Anglo-Saxon concept, which can be traced back to the 15<sup>th</sup>-16<sup>th</sup> centuries in England when there was an overwhelming concern over authorship (Flowerdew & Li,

2007b). The notions behind the term are originality, authenticity and ownership of language and ideas (Pennycook, 1996). However, the Western cultural heritage embedded in this concept may not be shared by other cultures. People from different cultural backgrounds may conceptualize the term differently. This may partly explain the lack of a common definition of plagiarism in the academic literature.

Plagiarism can be defined as using someone else's work or ideas without proper acknowledgement. There are many different forms of plagiarism, ranging from unattributed copying to insufficient paraphrasing. Two most typical acts proposed by Hacker (1991) in his definition are:

- (1) Borrowing someone's ideas, information or language without documenting the source and
- (2) documenting the source but paraphrasing the source's language too closely, without using quotation marks to indicate that the words and phrases have been borrowed (p. 507).

A key factor to define plagiarism is the intention to deceive. Among the six elements Pecorari (2001) has developed out of 53 definitions she collected from a survey of some universities in Australia, United Kingdom and the United States, intention is the only element that has provoked most controversies. Some universities described plagiarism as an intentional act, with a deliberate attempt to deceive; while others acknowledged it could be unintentional (Pecorari, 2001, p. 236), suggesting transgressive textual borrowing practices without an attempt to deceive could also contribute to plagiarism.

## **2.2 Chinese university students' knowledge of and attitudes toward plagiarism**

Several studies have suggested a lack of familiarity with the Western concept of plagiarism among Chinese university students. For example, Deckert (1993) found 170 freshmen in a Hong Kong university were not familiar with the notion of plagiarism in Western cultures, and had poor ability to identify such an act. In addition, the students seemed to lack deep understanding of the negative effects of plagiarism, as the major impact of plagiarism was considered to be merely detrimental to studies. The unfamiliarity with the concept of plagiarism was also reported by Zhang, Li, and Duan (2008) as well as Hu and Lei (2012). In a survey of 219 Chinese mainland college students, Zhang et al. (2008) found 90% of the participants were new to the notion of plagiarism as defined in Anglophone academia. However, unlike in Deckert's study, more than half of the participants deemed it a lazy or dishonest act. Similarly, in Hu and Lei's (2012) research, only a minority of students recognized verbatim copy (around 35%) and unacknowledged paraphrasing (around 12%) as acts of plagiarism, but both groups held a negative and punitive attitude toward the two forms of plagiarism. In the same vein, Gui, Ma, and Huang (2016) also reported participants' poor ability in identifying subtle forms of plagiarism in a survey of 63 Chinese university students, but again, most participants took a negative and intolerant attitude toward the plagiarism acts which they were able to identify, regarding them as immoral or disrespectful to the original author. These studies seem to suggest that in recent years, Chinese university students have achieved a better understanding of the negative effects of plagiarism and their attitudes toward such an act are clearly condemnatory. However, most of them may not have sufficient knowledge of what constitutes plagiarism in Anglophone academia and may still struggle in identifying such an act.

## **2.3 Studies on Turnitin**

Studies on Turnitin have mainly focused on (1) perceptions of the use of Turnitin and (2) the effectiveness of Turnitin in detecting and reducing plagiarism.

Perceptions of the use of Turnitin have been explored from different perspectives: namely the student's perspective (e.g. Dahl, 2007), the instructor's perspective (e.g. Sutherland-Smith & Carr, 2005; Buckley & Cowap, 2013), and a combination of both (e.g. Savage, 2004; Ayon, 2017). Overall, there was a general positive attitude toward the use of Turnitin (Savage, 2004; Dahl, 2007; Buckley &

Cowap, 2013). What students liked most was the convenience of using Turnitin to submit assignments (Dahl, 2007, p. 177), while the instructors' favorite part seemed to be the system's OriginalityCheck function (Buckley & Cowap, 2013, p. 567), which could provide an originality report for them to assess the potential level of plagiarism in each submission. Moreover, some instructors also acknowledged the function of Turnitin as a helpful learning tool (Buckley & Cowap, 2013; Dodigovic, 2013). However, there were also problems. The concern expressed most commonly by students was the fear of unintentional plagiarism being detected due to improper citations, "unconscious repetition" and "coincidental similarities" in academic sources (Savage, 2004), whereas some instructors also encountered technical issues in using the system (Sutherland-Smith & Carr, 2005; Buckley & Cowap, 2013).

Research on the effectiveness of Turnitin has mainly concentrated on its efficacy in detecting and reducing plagiarism. For example, Hill and Page (2009, p. 169) compared the detection efficacy between Turnitin and SafeAssign, and found Turnitin had a higher overall detection rate (82.4%). Stapleton (2012) examined the writing behavior of two classes, with one aware of the use of Turnitin and the other not, and found Turnitin could deter students from plagiarizing. Similarly, Heckler, Rice, and Bryan (2013) also reported students were less likely to plagiarize when they were aware of the use of Turnitin. Though the deterrent effect was widely acknowledged, it was also pointed out that Turnitin could not eradicate plagiarism (Ayon, 2017, p. 2102).

### 3 The Current Study and Research Questions

Though some of the aforementioned Turnitin studies have involved ESL/EFL students (Stapleton, 2012; Ayon, 2017), most of them have been conducted in Western educational settings. Fewer studies have explored students' perceptions on the use and effectiveness of Turnitin in EFL settings like mainland China. To fill in the gap, the present study investigates Chinese university students' perceptions of the use and effectiveness of Turnitin in a Sino-foreign joint institute in Shanghai. The following questions guide this research study:

1. What is Chinese university students' knowledge of and attitudes toward the Western concept of plagiarism?
2. How do Chinese university students respond to the use of Turnitin in EAP writing?
3. What are Chinese university students' perceptions of Turnitin's effectiveness in reflecting plagiarism?
4. What are Chinese university students' perceptions of Turnitin's effectiveness in reducing plagiarism?

## 4 Methodology

### 4.1 Setting

This study was carried out in a Sino-foreign joint business school in a university in Shanghai. To promote academic integrity, the school introduced Turnitin in 2011. It was among the first institutes in China to use the Turnitin system. All students' assignments (including the first and final drafts) in their EAP (English for Academic Purposes) writing courses, including EGAP (English for General Academic Purposes) writing courses in Year One and ESAP (English for Specific Academic Purposes) writing courses in Years Two and Three, must be submitted to Turnitin, where they will be graded by instructors with its online marking tool, GradeMark. In addition, a similarity report will be generated by the system for each draft. After receiving the similarity report and the online feedback, each student will have a chance to talk to the instructor in an individual feedback session. Students will then revise the first draft according

to the feedback they have received and submit the final draft to Turnitin, where they will get the final score for the assignment. During the whole process, the feature of Turnitin that allows students to see the similarity report immediately upon submission and resubmit their assignment before the due date is used so that they can check the similarity rate and revise the draft until they are satisfied with it.

## **4.2 Instrument**

Instruments used in this study include an online questionnaire and semi-structured interviews, both of which were conducted in Chinese. The questionnaire was adapted from the one used by Dahl (2007) and modified to suit the purpose and context of the present study. The instrument was firstly trialed by ten second-year students for any potential problems that might hinder comprehension and revised based on their feedback. It was then trialed on another ten students (including both first- and second-year students) and further revised before it was disseminated online. The final survey consisted of thirty-three questions in seven scales: knowledge of and attitudes toward plagiarism, response to the use of Turnitin, the effectiveness of Turnitin in reflecting plagiarism, the effectiveness of Turnitin in reducing plagiarism, the effects of using Turnitin in EAP writing, problems identified in using Turnitin, and overall comments of Turnitin. Participants were asked to indicate on a five-point Likert scale to what extent they agreed on each statement, with higher scores indicating stronger agreement. The internal consistency and reliability analysis results were acceptable, with an overall Cronbach's Alpha coefficient of 0.83.

To get better understanding of the questionnaire results, in particular the knowledge of and attitudes toward plagiarism, semi-structured interviews were conducted. Each interview lasted for about 20 minutes, during which participants were asked about their experience in using Turnitin and perceptions of the system. They were also asked to identify plagiarism from four writing acts: (1) unattributed copying, (2) unattributed paraphrasing, (3) attributed quotes without quotation marks, (4) attributed quotes with quotation marks, and rate them according to the seriousness with reasons provided.

## **4.3 Participants**

124 students from various majors (such as Finance, Accounting, International Trade, etc.) completed the online questionnaire in this study, including 46 freshmen, 46 sophomores, 28 juniors, three seniors and one postgraduate. Six of them were conveniently selected and interviewed after the survey. All students volunteered to participate in the study and were guaranteed that the data collected would only be used for the research purpose. The study was approved by the Ethics Committee of the institute.

## **4.4 Data collection and analysis**

The questionnaire was disseminated using an online survey tool, Wenjuanxing, and sent to students via an QR code and a link on June 25<sup>th</sup>, 2018, near the end of an academic year. The general purpose of the survey was explained in the cover letter and students were invited to participate on a voluntary basis. Within one week, 146 students responded, but 22 of them did not answer all the questions, which left 124 questionnaires valid for use. Results were run through in SPSS and descriptive analysis was made for all scales. In particular for two items related to GradeMark, one-way ANOVA was run to find out the group differences.

Semi-structured interviews were conducted one week after data collection from the survey so that the researcher had a chance to look at the preliminary results and seek further explanations for any problems reflected in the survey. Transcripts of the six interviewees were examined qualitatively.



## 5 Findings

### 5.1 Knowledge of and attitudes toward plagiarism

Table 1 presents the descriptive statistics for the scale that elicited students’ knowledge of and attitudes toward plagiarism. Among the 124 participants, 110 (88.7%) believed they knew exactly what was plagiarism. Furthermore, 116 participants (93.5%) considered plagiarism as “a very serious problem”, and 85 participants (68.5%) supported the view that students should retake the course once caught in plagiarizing. However, interestingly, although 112 participants (90.3%) deemed it necessary to use Turnitin to check originality in their assignments, only 45 (36.3%) would do so if the school did not require it.

When asked to identify plagiarized acts among unattributed copying, unattributed paraphrasing, attributed quotes without quotation marks, and attributed quotes with quotation marks in the interviews, one of the six interviewees failed to recognize attributed quotes without quotation marks as a form of plagiarism. Instead, it could be only “an error of punctuation” in her words. While all the other five identified the plagiarized acts successfully, they all agreed the forms of unattributed copying and paraphrasing were much more serious plagiarism than attributed quotes without quotation marks.

Table 1  
*Knowledge of and Attitudes toward Plagiarism*

Items	SA/A	
I know exactly what is plagiarism.	110	88.7%
Plagiarism is a very serious problem.	116	93.5%
Once caught in plagiarizing, students should retake the course.	85	68.5%
Anti-plagiarism awareness should be improved.	110	88.7%
It is necessary to use Turnitin to check originality in our assignments.	112	90.3%
Even without school requirements, I would check originality of my writing on Turnitin.	45	36.3%

*Notes:* 1. Items in the questionnaire were translated into Chinese by the researcher.

2. SA/A refers to Strongly Agree/Agree.

3. The number is the total of those who chose SA or A. The percentage is the ratio of the number over the total number of the participants. It is the same for Tables 2, 4-8.

### 5.2 Response to the use of Turnitin

Table 2 shows the descriptive statistics for students’ response to the use of Turnitin in EAP writing. Overall, there was a positive attitude to the use of the system. The most welcomed part was its similarity report. 105 participants (84.7%) considered Turnitin’s similarity report was easy to understand. The convenience of the system was also strongly identified. 102 participants (82.3%) deemed it was a convenient way to submit assignments via Turnitin, and 94 participants (75.8%) expressed their preference for using Turnitin to submit assignments rather than handing in paper assignments.

However, there were also some aspects not as commonly recognized, particularly the ones related to its online marking tool, GradeMark. Only 66 participants (53.2%) considered it easy to understand, and coincidentally, the same number of participants (53.2%) expressed the preference for getting online GradeMark feedback rather than feedback on paper assignments. One-way ANOVA revealed participants’ response toward the two items varied with their grades. As shown in Table 3, statistically

significant between-group differences were detected for both items between freshmen and juniors, with a p value of 0.000 and 0.005 respectively ( $p < 0.05$ ). While there were no statistically significant differences between freshmen and sophomores or sophomores and juniors for the comprehensibility of GradeMark, their p values (0.064, 0.069 respectively) did indicate the between-group differences almost reached statistical significance. As for the preference for receiving online GradeMark feedback, again no statistically significant group differences were found between freshmen and sophomores or sophomores and juniors, but the difference in their mean scores suggested increasing acceptance in students of higher grades.

Table 2

*Response to the Use of Turnitin*

Items	SA/A	
It is a convenient way to submit assignments via Turnitin.	102	82.3%
I prefer submitting assignment to Turnitin rather than handing in paper assignments.	94	75.8%
I prefer getting feedback on Turnitin rather than on a paper-based assignment.	66	53.2%
I prefer to see my grades on Turnitin rather than on a paper-based assignment.	83	66.9%
I would prefer more assignments to be submitted via Turnitin.	82	66.1%
GradeMark on Turnitin is easy to understand.	66	53.2%
Turnitin should be used in more universities in China.	93	75.0%
The similarity report on Turnitin is easy to understand.	105	84.7%

Note: SA/A refers to Strongly Agree/Agree.

Table 3

*Group difference on Comprehensibility of GradeMark and Online Feedback*

Dependent variable	(I)Your grade is	(J)your grade is	Difference in mean scores (I-J)	P value
Comprehensibility of GradeMark	Year 1	Year 2	-.500	.064
	Year 2	Year 3	-.565	.069
	Year 1	Year 3	-1.065	.000
Preference of receiving online feedback	Year 1	Year 2	-.326	.341
	Year 2	Year 3	-.530	.120
	Year 1	Year 3	-.856	.005

Note: 1.  $P < 0.05$

2. As the numbers of seniors and postgraduates were too small, these two groups were not included in One-way ANOVA test.

### 5.3 Turnitin's effectiveness in reflecting plagiarism

Table 4 demonstrates the descriptive statistics for Turnitin's effectiveness in reflecting plagiarism. 90 participants (72.6%) believed that Turnitin could effectively reflect plagiarism in their assignments, but 107 participants (86.3%) also felt that the similarity rate was still very high even when they did not think there was any plagiarism in their assignments. Besides this, 89 participants (71.8%) found that sometimes

Turnitin could not detect the plagiarized text, whereas 98 participants (79.0%) found that sometimes Turnitin would also flag original material as matching text. The seemingly self-contradictory attitude was also evident in the interviews. Three interviewees shared their doubts about the accuracy of the similarity rate when they mentioned that references and quotes were sometimes also included in the matching text.

Table 4  
*Effectiveness of Turnitin in Reflecting Plagiarism*

Items	SA/A	
Turnitin can effectively reflect plagiarism in my writing.	90	72.6%
Sometimes I didn't plagiarize, but the similarity rate was still very high.	107	86.3%
Sometimes Turnitin cannot detect the plagiarized text.	89	71.8%
Sometimes Turnitin falsely flags the original material as the matching text.	98	79.0%

Note: SA/A refers to Strongly Agree/Agree.

### 5.4 Turnitin's effectiveness in reducing plagiarism

Descriptive statistics for Turnitin's effectiveness in reducing plagiarism are presented in Table 5. 101 participants (81.5%) believed that using Turnitin could effectively reduce plagiarism. 113 participants (91.1%) admitted that they would pay special attention to paraphrasing skills when submitting an assignment to Turnitin, while 75 participants (60.5%) indicated that they would not care too much about how to cite if not submitting via Turnitin. Furthermore, 105 participants (84.7%) expressed their anxiety with the similarity rate whenever submitting an assignment to the system, and 57 participants (46%) acknowledged the impact of Turnitin on their writing process.

Table 5  
*Effectiveness of Turnitin in Reducing Plagiarism*

Items	SA/A	
Using Turnitin can effectively reduce plagiarism.	101	81.5%
When using Turnitin, I would pay special attention to paraphrasing skills in citations.	113	91.1%
When not using Turnitin, I would not pay special attention to how to cite from others.	75	60.5%
Using Turnitin has an effect on my writing process.	57	46%
Every time when I submit assignments to Turnitin, I get anxious about the similarity rate.	105	84.7%

Note: SA/A refers to Strongly Agree/Agree.

### 5.5 Effects of using Turnitin in EAP writing

Descriptive statistics for the effects of using Turnitin in EAP writing courses are presented in Table 6. The most noticeable benefits were enhanced anti-plagiarism awareness and expanded knowledge of English academic writing conventions, with the same mean score of 4.08, followed by improved EAP writing skills (m=3.99) and better understanding of the writing process (m=3.98).



Table 6  
*Effects of Using Turnitin in EAP Writing*

Items	SA/A	M
It has increased my anti-plagiarism awareness.	111(89.5%)	4.08
It has helped me to understand the writing process better.	105(84.7%)	3.98
It has helped to improve my EAP writing skills.	107(86.3%)	3.99
It has helped me to learn more about English academic writing conventions.	108(87.1%)	4.08

*Note:* SA/A refers to Strongly Agree/Agree.

Problems were also identified in using Turnitin. As can be seen in Table 7, 43 participants (34.7%) found they were not clear about how to lower the similarity rate in their writing, and 73 participants (58.9%) would like to expand their knowledge of what is plagiarism in Anglophone academia. Moreover, 82 participants (66.1%) would like to get more help on how to avoid plagiarism.

Table 7  
*Problems Identified in Using Turnitin*

Items	SA/A	
I am not clear about how to avoid the similarity rate being too high in my writing.	43	34.7%
I would like to know more about what is plagiarism.	73	58.9%
I would like to get more guidance on how to avoid plagiarism in EAP writing.	82	66.1%

*Note:* SA/A refers to Strongly Agree/Agree.

Table 8 displays descriptive statistics for overall comments on Turnitin. 113 participants (91.1%) believed that Turnitin was a reliable system, and 107 participants (86.3%) considered its similarity report was trustworthy. Altogether, 102 participants (82.3%) were satisfied with their experience in using Turnitin.

Table 8  
*Overall Comments on Turnitin*

Items	SA/A	
In general, Turnitin is a reliable system.	113	91.1%
In general, the similarity report of Turnitin is trustworthy.	107	86.3%
Overall, I am satisfied with my experience in using Turnitin.	102	82.3%

*Note:* SA/A refers to Strongly Agree/Agree.

## 6 Discussion

### 6.1 Research question 1: what is Chinese university students' knowledge of and attitudes toward plagiarism?

Previous studies have indicated that there was little familiarity with the concept of plagiarism in

Anglophone academia among Chinese university students, with only four out of 170 first-year students in Deckert's (1993) study and 10 out of 99 fourth-year English majors in Zhang, Li, and Duan's (2008) study having heard of the definition of the term. However, in the present study, nearly 90% of participants believed they had a clear understanding of plagiarism. One possible reason for this inconsistency could be the 170 participants in Deckert's (1993) study were incoming first-year students who had not been in the college for more than one month (p. 136). It is very likely that most of them had not received any training in English academic writing, nor had they been engaged in such writing practice. Not surprisingly, most of them had not heard anything about the concept of plagiarism in Western cultures. However, in the present study, students had just finished their study of an academic year. Therefore, even for freshmen participants, they had received at least one-year training in their EGAP writing courses, which had developed their understanding of the concept. Another way to understand the change is through "a developmental perspective" proposed by Flowerdew and Li (2007b, p. 166): In the past two decades, with the globalization of higher education, many Chinese universities have offered EAP writing courses to students, which provides them with an opportunity to learn more about Anglophone academic culture. Taking the participants in this study for example, early when they were about to start their first-year study in university, before they submitted the first EAP writing assignment, they had been briefed about the concept of plagiarism and received the training on how to use Turnitin in an orientation course. Therefore, it is not surprising to find these participants had more familiarity with and better understanding of plagiarism than those in previous studies.

However, due to the constraints of the method of the questionnaire, it would be necessary to cross check the high percentage of the self-reported understanding of plagiarism. In the interviews, one of the six interviewees failed to identify attributed quotes without quotation marks as a form of plagiarism, and all the other five considered it was not a form of plagiarism as serious as unattributed copying or paraphrasing. It seems that they did not realize that the absence of quotation marks in attributed quotes was essentially another form of violation of the original author's copyrights: the violation of the original author's ownership of language, which was just as serious as the violation of the original author's ownership of ideas as in the other two forms of plagiarism they had recognized. This revealed a lack of sufficient knowledge of what was and was not plagiaristic practice in Anglophone academia and deep understanding of the notion behind the Western concept of plagiarism among these participants, in particular the notion of the author's ownership of language. This can be illustrated by another example: four interviewees acknowledged that they did not realize that paraphrasing too closely or too lightly without using quotation marks was another form of plagiarism, even with attribution of the source; as they considered they had already changed the wording of the original sentences to some extent. Hence, it is not surprising to see nearly 60% of participants would like to know more about plagiarism and two thirds of the participants would like to get more guidance on how to avoid plagiarism in the survey results of *Problems identified in using Turnitin* (Table 7). It can be inferred that most students' understanding of the concept of plagiarism was not as comprehensive as they had reported, as there might still be some misconceptions.

In regards to the attitudes toward plagiarism, the preceding section has shown that most participants adopted a negative and punitive attitude toward the act. This is in line with the findings of previous studies (Hu & Lei, 2012; Gui et al., 2016). However, it is interesting to note a condemnatory attitude alone may not be sufficient to prevent plagiarism: Only slightly above one third of the participants (36.3%) would check originality on Turnitin if there were no school requirements despite the fact that over 90% of participants considered it necessary to do so. It seems a number of participants' actions did not match with their attitudes: On the one hand, students were very resolute-minded in combating plagiarism; on the other hand, those who would voluntarily push themselves into real action were few in number. This suggests it may be insufficient to merely take educational and punitive measures before and after the act of plagiarizing. Instead, measures in the process of writing such as use of anti-plagiarism software like Turnitin are also needed so as to monitor the originality from time to time and change students'

writing behavior in the process of learning, thus eventually eliminating plagiarism from the entire writing process.

## **6.2 Research question 2: how do Chinese university students respond to the use of Turnitin in EAP writing?**

As demonstrated in the previous section, most participants in the current study held a positive attitude toward the use of Turnitin in EAP writing courses. Two most welcomed features were the easy comprehensibility of the similarity report and the convenience of the system in submitting assignments. While the convenience of the system was similarly recognized in Dahl's (2007, p. 177) study, the views on the similarity report varied, with a much higher percentage of participants (84.7%) in this study in favor of the comprehensibility of the report than that (62.5%) in Dahl's (2007, p. 180) study. One possible explanation could be that participants in Dahl's study "did not receive any formal training on how to use Turnitin" (p. 179) while students in this study had taken an orientation course in which they were trained on how to use the system before submitting any assignments. Furthermore, Dahl's study was conducted more than ten years ago. With the ongoing improvement of the system, Turnitin may have made its similarity report easier to understand than before.

Also of notice are the discrepancies in the survey results related to GradeMark. The current study finds only slightly more than half (53.2%) of the participants considered GradeMark were easy to understand, and the same percentage of the participants expressed the preference for checking online GradeMark feedback in comparison with more than three fourths (78%) of participants reporting the same preference in Dahl's (2007, p. 179) study. One possible reason could be that Chinese university students were not familiar with the symbols used in GradeMark, which were often abbreviations of grammar metalanguage, for example, T indicating problems in tense, VA indicating problems with verb agreement, etc. A closer look at the data has found statistically significant group differences existed between freshmen and juniors in the acceptance of the two features, with significantly higher acceptance in juniors. Mean scores and p values of ANOVA tests between freshmen and sophomores as well as sophomores and juniors also suggested increasing acceptance in students of higher grades. It can be inferred that the longer time the participants used Turnitin, the easier for them to understand GradeMark symbols and accept the online feedback. Hence it seems that it takes some time for Chinese university students to get used to GradeMark and its online feedback.

## **6.3 Research question 3: what are Chinese university students' perceptions of Turnitin's effectiveness in reflecting plagiarism?**

As shown in the previous section, the present study has detected a seemingly self-contradictory attitude among students toward the accuracy of the similarity report: while most of the participants (72.6%) acknowledged the effectiveness of Turnitin in reflecting plagiarism, a widespread concern existed among 86.3% of the participants over the similarity rate being too high even when they did not think there was any plagiarism in their assignments. One possible reason could be that some instructors did not exclude references or quotes in the OriginalityCheck, as mentioned by a few interviewees, thus increasing the similarity rate. However, a more important reason could be that some transgressive intertextual practices in the participants' writing were not recognized as plagiarism due to their limited knowledge of the term. As revealed in the interviews, for example, some students may consider attributed quotes without quotation marks as a punctuation error instead of a plagiaristic act, while others may view attributed close paraphrasing without quotations marks as acceptable as they have already made some adjustments to the original text. It was due to this lack of knowledge that many unintentional plagiaristic acts occurred, which had resulted in a higher similarity rate. As Stapleton (2012) pointed out in his study

with 44 international students (mostly Chinese students), a substantial amount of the matching text in his participants' writing might be unintentional (p. 132). This also reveals little familiarity with English academic writing conventions among some Chinese university students, as discussed by Xu (2013) in her survey study on Chinese learners' perceptions of English academic writing formats.

Of course, as a computer system, Turnitin has its own technical limitations. As pointed out by Hill & Page (2009, p. 175), Turnitin could sometimes flag original material as matching text. This was supported by 79% of the participants in the current study. However, on the other hand, 71.8% of the participants also found Turnitin sometimes could not detect plagiarized material, a phenomenon also reported by Savage (2004) and Dahl (2007). This could be due to the limitations of the database. For sources not contained in its database, it is not surprising that Turnitin cannot detect the plagiarized text.

With all the above being said, Turnitin's similarity rate is still perceived as trustworthy, with 86.3% of the participants in this study believing so and 91.1% considering it a reliable system in the *Overall Comments* (Table 8). It can be inferred that Turnitin is generally effective in reflecting plagiarism although it may include unintentional plagiarism caused by students' lack of knowledge of plagiarism and little familiarity with English academic writing conventions. In fact, the similarity rate has become an important indicator for instructors to identify potential student plagiarizers, though it may require particular scrutiny to distinguish intentional plagiarism from unintentional plagiarism, or even falsely flagged matching text.

#### **6.4 Research question 4: what are Chinese university students' perceptions of Turnitin's effectiveness in reducing plagiarism?**

Previous studies have found Turnitin an effective tool in reducing plagiarism (Savage, 2004; Stapleton, 2012). The present study has yielded similar findings: Most participants (81.5%) found using Turnitin could effectively reduce plagiarism. One possible reason could be the use of Turnitin had forced students to put more efforts in appropriate referencing, as over 90% of the participants pointed out they would pay special attention to paraphrasing skills in citations when submitting assignments to Turnitin whereas as high as 60.5% of the participants acknowledged they would not do so if otherwise. It seems the use of Turnitin has pushed students to regulate their use of citations and hone their skill of paraphrasing, which is an important part in avoiding plagiarism. As pointed out by Deckert (1993), it was not uncommon to find insufficient paraphrasing and improper documentation in ESL students' academic writing (p. 131). By pushing students to be more careful in referencing and more effective in paraphrasing, Turnitin has helped to cut down plagiarism caused by problems in these areas.

Another possible reason could be the use of Turnitin has caused a widespread concern over the similarity rate and thus has exerted an influence on the writing process of some students. As the survey results in previous section have shown, over 80% of the participants would get anxious about the similarity rate whenever submitting an assignment to Turnitin and nearly half of the participants admitted the impact of Turnitin on their writing process. It seems Turnitin has brought about changes in students' writing behavior as well as in attitudes. Out of the anxiety over the similarity rate, students started to pay more attention to and abide by English academic writing conventions, hence effectively reducing plagiarism.

## **7 Conclusion**

In conclusion, this research has adopted a mixed-method approach to investigate Chinese university students' perceptions of the use and effectiveness of Turnitin in EAP writing. As evident in the findings, there was generally a positive attitude toward the use of Turnitin in EAP writing among students. Two most welcomed features were the similarity report and the convenience of the system in submitting

assignments, while acceptance of GradeMark and its online feedback were found to be significantly related to the time of use, with more acceptance associated with longer time of using the system. In terms of its effectiveness, most students perceived Turnitin as an effective tool in reflecting and reducing plagiarism in their writing. Using Turnitin in EAP writing not only incurs a change in students' writing behavior but also in their attitudes, thus cutting down plagiarism effectively.

The use of Turnitin in EAP writing has also brought a positive impact on increasing students' anti-plagiarism awareness and expanding their knowledge on EAP writing, including learning more about the writing process as well as English academic writing conventions, and generally improving EAP writing skills such as paraphrasing (Dodigovic, 2013). Also, by identifying the problems with students' understanding of plagiarism, Turnitin has helped students to reconstruct the concept. Considering these positive effects, it might be worth introducing Turnitin in EAP writing instruction in EFL contexts like China as it can not only serve as a plagiarism detection tool to combat plagiarism in student writing, but also an educational tool to increase students' anti-plagiarism awareness and expand related knowledge on academic writing. Furthermore, unlike the educational and punitive measures taken before and after the plagiarizing act, the use of Turnitin in EAP writing in this study focuses on the process of writing by providing formative feedback on the similarity rate in students' writing and engendering correspondent adjustments in their writing behavior, hence becoming more effective in preventing plagiarism.

However, the research also finds although students may generally have more familiarity with and better understanding of the Western concept of plagiarism than decades ago, some students may still have misconceptions and lack sufficient knowledge of what constitutes plagiarism, which can be a major factor contributing to the high similarity rate in their writing. This suggests a need for explicit instruction of what is plagiarism in Anglophone academia, illustrated with useful examples, especially those coming from their own writing. Student-student and student-instructor discussions on the topic of plagiarism can also be encouraged as they are necessary for students to construct such a complex ideology (Evans & Youmans, 2000). Guidance on how to avoid plagiarism and instruction of related skills on referencing and paraphrasing also prove to be helpful. Finally, error correction on referencing and citations in their own writing should also be encouraged.

One limitation about the study is that it did not include the similarity rates of these participants' writing assignments submitted to Turnitin. Due to the procedure of the survey, questionnaires were completed by whoever willing to complete it online. Therefore, it was hard to track those student participants. Future study overcoming this problem may provide a more convincing conclusion, with textual similarity rates from the same participants triangulating the survey results.

## Note

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