

Relationship between socio-cultural writing strategy use and language proficiency among Chinese tertiary English majors*

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Abstract

This paper aims to report on the results of a study on the use of socio-cultural writing strategies as well as its correlation with second language proficiency of a group of Chinese tertiary English majors. To this end, 306 English major students were randomly invited for participating in a questionnaire survey, and 12 of them were purposively sampled for a semi-structured interview. The collected quantitative data were subjected to descriptive analysis as well as Pearson Correlation test. The quantitative results show that the respondents orchestrated a wide range of utilizing socio-cultural writing strategies, of which they had a high level of using role-mediated strategies, followed by a medium-to-high level in deploying sign-mediated strategies, rule-mediated strategies, tool-mediated strategies, and community-mediated strategies respectively. Pearson Correlation test reveals a significantly negative correlation between a dimension of community-mediated strategies (peer interaction) and the surveyed population's NMET (National Matriculation English Test) scores, and a significantly positive correlation between a dimensional (task requirement) and overall rule-mediated strategies and the participant's TEM-4 (Test for English Major Band 4) results. These results were further reflected in the qualitative data. The findings of this study shall shed light on teaching English writing to English majors in the Chinese English as a foreign language (EFL) context and others.

Keywords Chinese English majors; socio-cultural writing strategies; language proficiency

1. Introduction

Over the past four decades, second language (L2) writing strategies have been extensively explored in the field of second language acquisition. Previous studies have been mainly cognition-oriented (Oxford, 1990). Early studies have paid much attention to the conceptualization of L2 writing strategies (Deng & Deng, 2017; O' Mally & Chamot, 2001; Zamel, 1983), the measurement of the level of using L2 writing strategies (Yao & Qin, 2004; Sang, 2016; Yang, 2019), relationship between writing strategy use and other learner variables such as self-efficacy (Li, 2013; Gu & Li 2018), learning styles (Wang & Zhang, 2013), anxiety (Zhou, 2014), language proficiency (Liu, 2004; Xiu & Xiao, 2006; Gao, 2017), as well as writing strategy instruction (Zhao, Ao & Zhou, 2012). These

studies present us a holistic picture of writing strategy use from a cognitive perspective. However, this cognitive-oriented approach has been criticized for taking L2 writing strategies as a static construct which is considered to be paralyzed in unveiling its relationship with socio-cultural factors (Gao, 2006; Lei, 2016; Li, 2014). Results regarding variations in writing strategy use and language proficiency are reported to be inconsistent in different studies (i.e., Gao, 2017; Gu & Li, 2018; Han, 2012; Li *et al.*, 2022).

Given the shortcomings in existing research on L2 writing strategies the socio-cultural perspective has been incrementally voiced (Gao, 2006). The socio-cultural theory holds that cognitive development results from the interplay between individual learners and the socio-cultural milieu where they belong to (Vygotsky, 1978). With regard to L2 writing strategy use, the socio-cultural perspective claims that the application of

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writing strategies is a socially situated phenomenon which is mediated by an array of symbolic and physical resources (Lantolf & Thorne, 2006). The socio-cultural perspective offers a new light on the nature of writing strategy use in L2 writing (Lei, 2016). However, research from such a socio-cultural approach to writing strategy use is limited (Lei, 2016), and its results are to be further validated in alternative contexts.

Therefore, in order to bridge the aforementioned gaps, this study intends to explore the overall features of socio-cultural writing strategy use and its relationship with language proficiency among a cohort of Chinese tertiary English major students. The results are expected to offer conducive implications for the improvement of teaching and learning efficiency of English writing in the Chinese EFL context and other similar environments.

2. Literature Review

2.1. Studies on L2 Writing Strategies from a Cognitive Perspective

Previous studies on L2 writing strategies have been dominated with a cognitive approach, just as those of second language learning strategies. Language learning strategy is regarded as the specific learning strategy (Rubin, 1975). It means the concrete methods and indicates that language learners adopt for the acquisition of the second language. It is the measure that learners take to learn effectively, which can be both external and internal (Wen, 2001). Making full use of strategies is advantageous for setting a practical goal, following the effective method, and achieving one's goal. The present study agrees with Wen's (2001) opinion, considering strategy here as a learning strategy, especially the subdivision -- writing strategy, which can be used to explain the reasons of language proficiency differences between proficient and less proficient writers.

L2 writing strategies have been defined in an extensive way. Specifically, writing strategies are crystallized from the idea of taking writing as a process (Zamel, 1983). Under this process-oriented approach, writing strategies are explored from the perspective of planning, conceptualizing, reviewing, modifying and revising (Flower & Hayes, 1981; Wang, 2009). They are regarded as the learning process of using some effective methods and means to achieve the learning goal (Deng & Deng, 2017). Besides, writing strategy is also defined by following Oxford's (1990) six-taxonomy, namely, *Meta-cognitive strategy*, *Affective strategy*, *Social strategy*, *Memorizing strategy*, *Cognitive strategy*, and *Compensatory strategy*. This definition is echoed by O'Mally and Chamot (2001) who divide writing strategies into *Meta-cognitive strategy*, *Cognitive strategy* and *Social-affective strategy*, which is widely acknowledged.

Following the cognition approach, previous research on L2 learning strategies, L2 writing strategies

in particular, mainly focuses on the following issues: measuring the level of utilizing L2 writing strategies (Yao & Qin, 2004; Sang, 2016; Yang, 2019), exploring the relationship between writing strategy use and other learner variables such as self-efficacy (Li, 2013; Gu & Li 2018), learning styles (Wang & Zhang, 2013), anxiety (Zhou, 2014), language proficiency (Liu, 2004; Xiu & Xiao, 2006; Gao, 2017), as well as writing strategy instruction (Zhao, Ao & Zhou, 2012).

Research has examined the level of using writing strategies among L2 learners (Yao & Qin, 2004; Sang, 2016; Yang, 2019). For instance, Yao & Qin (2004) have found a low level of using writing strategies among Chinese non-English major learners. On the other hand, Chinese non-English major students were found to display a rich repertoire of writing strategies in their learning of English writing (Hu, 2006). These non-English major students were found to most frequently exercise meta-cognitive strategies, cognitive strategies, and communication strategies (Jiang, Liu & Li, 2009). They were also reported to most use planning strategies but inadequately motivational strategies (Sang, 2016). Other groups of EFL learners such as middle school students have also drawn attention from the researchers. For example, Chinese EFL learners of middle schools have been identified to most frequently use compensatory strategies, while limited in using meta-cognitive strategies (Huang & Zhou, 2016).

Secondly, research on writing strategies sheds its focus onto another topic related to strategic training and instruction (Wang, 2009; Zhao, Ao & Zhou, 2012). Wang (2009) primarily centers on the pre-writing strategy training and corresponding effect. Zhao, Ao & Zhou (2012) explore the effect of writing strategy instruction upon writing motivation and writing proficiency, based on which they put forward a writing strategy instruction model for teaching English writing to English majors.

Attention has also been paid to the relationship between the use of writing strategies and learner variables such as self-efficacy (Li, 2013; Gu & Li, 2018), learning styles (Wang & Zhang, 2013), and anxiety (Zhou, 2014). For instance, the use of writing strategies is correlated with self-efficacy of Chinese tertiary non-English major students (Li, 2013). Learners with strong self-efficacy would more effectively use a wide range of writing strategies. However, this is not the case of middle school students who were reported to be partially related with self-efficacy in their deployment of writing strategies (Gu & Li, 2018). Gender factor is also examined in EFL learners' use of writing strategies (Liu & Li, 2009; Wang, 2013). Studies have revealed that the use of writing strategies is not significantly related to gender, but to anxiety (Zhou, 2014). Moreover, the non-English major learners' use of writing strategies is found to be significantly related to their perceptual learning styles (Wang & Zhang, 2013).

2.2. Studies on L2 Writing Strategies in Relation to Language Proficiency

Relationship between L2 writing strategy use and language proficiency has been examined from two perspectives. The first perspective focuses on the differences in writing strategy use between successful and less successful learners (Yang, 2002; Xu & Tang, 2007). For example, successful and less successful writing learners are found to be significantly different from each other in their use of composing, focusing and revising strategies (Yang, 2002). Successful L2 writers are more effective than their less successful counterparts in terms of meta-cognitive subject, task and strategic awareness, employment and behavior (Xu & Tang, 2007). In the same vein, Wu (2005) studies the distinction between good language learners and less successful language learners, which analyzes the predictive ability from writing strategy to writing performance.

Besides, the relationship between writing strategy use and writing proficiency has also drawn attention from researchers (Liu, 2004; Xiu & Xiao, 2006; Ren, 2013; Li, 2013; Gao, 2017). The use of writing strategies is reported to be closely related to the quality of L2 writing (Liu, 2004). Specifically, English major students' use of writing strategies is found to exert direct influence upon the writing process of Test for English Majors Band 8 (TEM-8), but indirectly impact TEM-8 writing scores as well as TEM-8 scores (Xiu & Xiao, 2006). The positive influence of writing strategies could predict writing achievements (Ren, 2013; Li, 2013; Gao, 2017). Differently, Meng and Wu (2012) reported a weakly correlated relationship between use of writing strategies and writing achievements. This is echoed by Han (2012).

2.3. L2 Writing Strategies from a Socio-cultural Perspective

The traditional cognitive approach has presented us a holistic picture of L2 writing strategy use. However, the shortcomings of this approach to L2 writing strategies have been increasingly lamented. The cognitive-oriented research has been criticized for its disadvantages of taking writing strategy use as a static phenomenon, its ignorance of the influence of external socio-cultural factors, and its overreliance on quantitative techniques (Gao, 2006; Li, Chen, Ma, Zhang & Huang, 2021). Accordingly, a socio-cultural perspective has been continuously called for in the past decades (Gao, 2006; Lei, 2016; Li, 2014; Lantolf & Thorne, 2006).

Social-cultural theory holds that language is a cognitive process that is mediated by a given social context (Vygotsky, 1978; Gao, 2010). This is further reflected in the idea that learning is socially situated (Nikolay, 2015). The mediation is realized through tool and sign, also known as cultural artefacts. Socio-cultural theory emphasizes the significance of social and cultural factors, which play an essential role in human beings' cognitive development (Lantolf & Thorne, 2006; Vygotsky, 1978).

L2 writing is conceptualized as a socially situated activity which is not purely related to the private action,

but the social trait embedded within a give environment (Lei, 2016). L2 writing strategies from a socio-cultural perspective are thus considered as a type of social act that involves a complex dialogic and distributed process of invention and knowledge transformation, mediated by cultural and historical artefacts (Bazerman & Prior, 2004; Prior, 2006). It could be seen that a socio-cultural perspective could offer new light for us to understand the role that socio-cultural factors play in L2 writing strategy use.

However, to our knowledge, the research on L2 writing strategies from a socio-cultural perspective is scanty. Of the limited number of studies, Lei (2008, 2016) and Zareian & Mallahi (2016) are of particular importance to the present paper. In her studies, Lei (2008, 2016) examined qualitatively the strategy use of successful and less successful L2 writers from a socio-cultural perspective. She reported that the socio-cultural strategy use is mediated by five factors, namely, *tool-mediated strategies*, *sign-mediated strategies*, *rule-mediated strategies*, *community-mediated strategies*, and *role-mediated strategies*. Her studies provide a theoretical foundation for the present study. Similarly, Zareian & Mallahi (2016) developed a quantitative instrument to measure the use of socio-cultural writing strategy among Iranian EFL learners. Their effort is the first to quantify socio-cultural strategy use and offers reference for future empirical studies.

In summary, previous studies on L2 writing strategies mainly adopt the cognitive approach which fails to take into account the role of socio-cultural factors. Secondly, these studies mainly rely on questionnaire surveys which could not offer in-depth understanding of the use of strategy use in L2 writing. Additionally, these previous studies are dominant in focusing on non-English majors, while relatively few on English majors. More importantly, inconsistent results have been reported pertaining to the use of writing strategies and its relationship with language proficiency. Last but not least, even though the socio-cultural perspective has been advocated, its potential is to be further validated with more empirical evidence in other EFL contexts. Therefore, to address these issues, this study aims to explore the socio-cultural writing strategy use of a cohort of Chinese tertiary English majors.

3. Research Design

3.1. Objectives

This study aims to explore the features of socio-cultural writing strategy use of Chinese tertiary English majors and its relationship with language proficiency. To this end, this study shall address the following research questions:

Research Question 1: What is the feature of socio-cultural writing strategy use among Chinese tertiary English majors?

Research Question 2: What is the relationship

between the surveyed participants' socio-cultural writing strategy use and language proficiency?

3.2. Participants

This study involved two groups of participants. The first group of participants was for the questionnaire survey. They were 306 Chinese tertiary English majors from a local university in central China. The quantitative population was structured with 30 male students and 276 females. Of the 306 respondents, there were 75 freshmen, 80 sophomores, 77 junior students, and 74 seniors. The participants were from different places, 84 from cities, 121 from towns and 101 from rural areas. All the participants reported their National Matriculation English Test (NMET, also known as

Gaokao) scores, with the highest score of 146 and the lowest score of 68, and an average score of 122.3235 out of the 150 full marks. Among the 306 respondents, only 151 of them had the scores of Test for English Majors Band 4 (TEM-4). They averagely scored 66.8808 out of the 100 full marks, with the highest of 88 and the lowest of 45. In light of their self-evaluated English language proficiency, 80 students considered themselves at a low level, 216 students at a medium level, and only 10 students at a high level. They were at an age ranging from 18 to 23 and had been learning English for at least 9 years. They were chosen for collecting the data for the reason that they had taken certain relevant writing courses and had writing experience either in formal writing or informal essays.

Table 1 Demographic Information of the Interviewees

No.	Student	Gender	Grade	Hometown	TEM-4 Score	NMET Score	Self-rated English Proficiency
1	Henry	Male	Freshman	Countryside	/	114	Low
2	Andrew	Male	Freshman	Town	/	138	Medium
3	David	Male	Freshman	Countryside	/	120	Medium
4	Leah	Female	Sophomore	Countryside	/	140	High
5	Leona	Female	Sophomore	Town	/	132	Medium
6	Cathy	Female	Sophomore	Town	/	130	Medium
7	Rachel	Female	Junior	City	69	128	Medium
8	Olivia	Female	Junior	City	77	140	High
9	Bruno	Male	Junior	City	67	121	Medium
10	Grace	Female	Senior	Town	79	140	High
11	Helen	Female	Senior	Countryside	83	110	Medium
12	Jack	Male	Senior	Town	60	110	Medium

The second sample population for the semi-structured interviews involved 12 students purposively selected from the quantitative participants (Table 1). They were anonymously named as Henry, Andrew, David, Leah, Leona, Cathy, Rachel, Olivia, Bruno, Grace, Helen, and Jack respectively. There were five males and seven females. Three of them were from urban areas, four from countryside, and five from towns. Their English scores in Gaokao (that is, the National Matriculation English Test) vary from 110 to 140 out of the 150 full marks. Of these 12 interviewees, only the three juniors and the three seniors provided their TEM-4 marks, ranging from 60 to 83. Regarding their self-evaluated English language proficiency, only one student perceived himself with low English language proficiency. Three students were of high English language proficiency. Eight students were of low English language proficiency.

3.3. Research Setting

For a better understanding of the differences of the socio-cultural writing strategy use among English majors, it would be beneficial to obtain a rough idea of the English writing courses as well as the teaching of English writing at the selected local technological university in central China.

English writing teaching and learning in most Chinese universities encounters certain challenges.

Currently, English writing teaching can be divided into product-oriented approach and process-oriented approach (Ren, 2013). The latter requires more teaching hours of teaching and engagement from teachers. However, under the washback of the exam-oriented educational practice, English language output competence, particularly English writing performance, is not satisfactory. Teaching hours of English writing has been reduced considerably in most Chinese ordinary local universities. Teachers also face the challenge of improving students' exam performance. As a result, writing teaching, process-oriented teaching is not prioritized in EFL class. This discouraging situation in turn tends to make students attach less importance to writing learning (Yao & Qin, 2004).

At the selected local technological university, English writing class is usually offered to English majors from the second academic year when the learners have received a fundamental education of vocabulary and grammar. Otherwise, early launch of writing activities shall pose challenge to the students' completion of output tasks such as completing a writing assignment (Wei, 2007). The writing module is usually delivered by two professional teachers who have been teaching writing for a number of years. The first writing module is based on the textbook named *A Basic Course in Writing*. During this period, teachers teach English writing from manuscript form and punctuation, proper

words use, correct and effective sentences, paragraph features to summary procedures to help students compose essays (Ding & Wu, 2011). Simultaneously, the course serves as a preparation for the learners to take the TEM-4 test, which means that teachers shall also focus on writing test tips in their teaching practice. At the first semester of their final year, the university shall provide the students with an advanced writing class with a textbook *Writing Tutorial of English for General Academic Purposes*. It aims at teaching students how to write various kinds of essays. The genres of the essays range from research paper, to synthesis essay, argumentative essay, definition essay, cause and effect essay, and comparison and contrast essay, and others.

3.4. Instrumentation

The instruments for this study include a questionnaire and a semi-structure interview protocol. The questionnaire was informed by Lei (2016) and adapted from Zareian & Mallahi (2016). Before finalizing the questionnaire, six participants who were excluded from the later survey were invited for a pilot study. The questionnaire was composed of two parts: the first part inquired the students' demographic information, which included their gender, grade, English scores of the National Matriculation English Test (NMET), scores of Test for English Majors Band 4 (TEM-4), regions and the self-evaluation of English proficiency. The second part comprised forty-nine items about socio-cultural writing strategy use among Chinese English majors (Appendix). The questionnaire was framed with a Likert-5 point scale, with the answers ranging from *completely disagree* (1) to *completely agree* (5).

The questionnaire scale was structured with the following five dimensions: tool-mediated strategies (Item 1-14), sign-mediated strategies (Item 15-24), rule-mediated strategies (Item 25-30), community-mediated strategies (Item 31-43), and role-mediated strategies (Item 44-49). To be specific, tool-mediated strategies included The Outline of Writing Process (Item 1-3), Internet Assistance (Item 4-6), Reading Material (Item 7-10), and Writing Exercise (Item 11-14). Sign-mediated strategies were mainly subsumed into Language Knowledge Learning (Item 15-20) and The Application of Mother Tongue (Item 21-24). Rule-mediated strategies were divided into Task Requirement (Item 25-28) and Rhetoric (Item 29-30). Community-mediated strategies were categorized into Teacher's Instruction (Item 31-35), Peer Interaction (Item 36-40), and Model Study (Item 41-43). Role-mediated strategies were further classified into Identity as an English Major (Item 44-45) and Identity as a Student (Item 47-49). The reliability of the questionnaire was tested by Cronbach's alpha. The Cronbach's alpha was 0.936, which indicated that the questionnaire was of high reliability.

In addition, an interview protocol was designed to guide the semi-structured interviews. It was also made up of two parts. Part One was mainly about the basic

information of the interviewees such as the gender, grade, hometown, TEM-4 score, English score in Gaokao and self-perceived English language proficiency. Part Two involved 6 questions centering on the five categorized socio-cultural writing strategies, namely, *tool-mediated strategies*, *sign-mediated strategies*, *rule-mediated strategies*, *community-mediated strategies*, and *role-mediated strategies*. Specifically, the interview protocol included the following 6 questions: 1) Have you ever used some tool-mediated strategies in your writing such as listing your ideas in an outline, writing a draft, and consulting online dictionaries? Please state the writing process in detail. 2) Have you ever used some sign-mediated strategies in your writing such as acquiring new words and expressions, using a variety of sentence-patterns and learning about cohesiveness, coherence and logic? Please state the writing process in detail. 3) Have you ever used some rule-mediated strategies in your writing such as seeking satisfactory grades, reviewing teacher's instruction and using various rhetorical skills? Please state the writing process in detail. 4) Have you ever used some community-mediated strategies in your writing such as discussing the topic with peers, seeking advice from them and learning some strategies from them? Please state the writing process in detail. 5) Have you ever used some role-mediated strategies in your writing such as using other resources to improve writing, being aware of English identity and managing to finish the task? Please state the writing process in detail. 6) Do you use any other writing strategies that are not mentioned above? If you have used, please tell me in detail.

3.5. Data Collection

Upon acquiring consent from the teachers, the authors firstly briefed the participants the purposes and requirements for the survey. The participants were then promised that their response would pose no threat to the final scores of their English course of the semester. Then, the survey was administered with four hundred copies of the questionnaire distributed to the participants. The survey was conducted in Chinese for the sake of guaranteeing clear understanding of the items from the respondents. Of the distributed copies, 397 were returned. Removing the wrongly answered or the incomplete ones, there were 306 copies valid for later analysis.

A follow-up semi-structured interview was conducted after the questionnaire survey. The 12 interviewees were purposefully selected in terms of grade of education, gender, and language proficiency. All the interviews were conducted in the interviewees' mother tongue Chinese for the purpose of ensuring accurate expression. Each interview lasted for about 15-20 minutes, and tape-recorded.

3.6. Data Analysis

The collected questionnaire data were processed by means of Statistics Package for the Social Sciences 20.0 (SPSS 20.0). Descriptive techniques such as

means were applied to analyze the data to answer the first research question with regard to the overall features of socio-cultural writing strategy use among the participants at the five categories.

Secondly, in order to explore the relationship between socio-cultural writing strategy use among the participants and language proficiency, Pearson Correlation test was performed to investigate the correlation between socio-cultural writing strategy use among the participants and their language proficiency in relation to scores of the National Matriculation English Test (NMET) and Test for English Majors Band 4 (TEM-4). For better understanding the relationship between socio-cultural writing strategy use and language proficiency, Pearson Correlation test was performed both at the dimensional and sub-dimensional levels of the socio-cultural writing strategies.

The collected interview data were analyzed to verify the questionnaire results by means of qualitative content analysis approach (Dörnyei, 2007). Then the data were transcribed word by word. Finally, the transcribed interview texts were read and reread several times to identify the themes whether the interview results could prove the quantitative findings.

4. Results and Discussion

4.1. Features of Socio-cultural Writing Strategy Use among the Participants

Table 2 reports the overall level of socio-cultural strategy use among the participants. When evaluating the strategy use level, we follow Oxford's (1990) standard that learners shall display a low level of using language learning strategies if the mean value is below 2.5 out of a Likert-5 point scale, a medium-to-low level if the mean value is between 2.5 and 3.0, a medium-to-high level if the mean value is between 3.0 and 3.5, and a high level if the mean value is above 3.5.

Table 2 The Participants' Use of Socio-cultural Writing Strategies

Category	Number	Minimum	Maximum	Mean	SD
Tool-mediated strategies	306	1.64	5.00	3.34	.48931
Sign-mediated strategies	306	1.20	5.00	3.39	.57478
Rule-mediated strategies	306	1.17	5.00	3.34	.59518
Community-mediated strategies	306	1.31	5.00	3.30	.58438
Role-mediated strategies	306	1.00	5.00	3.55	.61977

In summary, the respondents displayed a pattern of socio-cultural strategy use as follows: they tend to most frequently use role-mediated strategies, which is followed by sign-mediated strategies, tool-mediated and rule-mediated and strategies, and community-mediated strategies. This result partially confirms Lei (2016) and Zareian & Mallahi (2016) in that tool-mediated strategies seem to be frequently endorsed by the surveyed participants. The difference between our

Judged from the above criteria, we can find that role-mediated strategies (mean = 3.55) have the highest mean value among the five categories, which is over the 3.5 threshold. That is to say, the participants displayed a high level of using role-mediated strategies in their English writing learning. This result indicates that the surveyed respondents most frequently used role-mediated strategies. It seems that the participants had a clear image of being not only an English learner, but also an English major student. This clear image of identity helped then set clear position and goal in their English writing learning, thus promoting their strategic awareness and agentic power (Lei, 2008, 2016; Li, Chen, Ma, Zhang & Huang, 2021).

With regard to the other four categories of socio-cultural writing strategies, the mean value for sign-mediated strategies is 3.39, followed by tool-mediated strategies and rule-mediated strategies whose mean values are both 3.34, and at last community-mediated strategies (mean = 3.30). All these mean values fall into the criterion between 3.0 and 3.5, which means that the participants demonstrated a medium-to-high level in exercising these four dimensional socio-cultural writing strategies.

The above results are also reflected in the interviews. For instance, it is indicated that students are inclined to use *tool-mediated strategies*. Take the answers of Andrew and Henry respectively: "I list my ideas in an outline to help me organize ideas and think more clearly when preparing for the task" (Henry, translated from Chinese). It is also acknowledged by Andrew: "Yes, I used it. To make my outline more effective, I include not only ideas but difficult words that I brainstormed and expected to use for writing the drafts. I use the internet to find samples of the essay/paragraph I want to write about" (Andrew, translated from Chinese). Henry used the outline to help him finish the writing. Andrew not only wrote the draft but also used the internet to help him write more successfully. These words demonstrate that they were able to deploy the *tool-mediated strategies*.

study and the above mentioned two studies lies in that we have found role-mediated strategies are inclined to be most frequently used by the participants, which was early identified as the lowest used ones in their studies. This might be explained by the increasing influence of English as a global language and the production-oriented approach (Wen, 2015) incrementally practiced nowadays in Chinese EFL class. The production-oriented approach underscores the competence of using

language for genuine and practical communication, which shall strengthen the learners' strategic awareness.

4.2. Correlation between Socio-cultural Writing Strategy Use and Language Proficiency

4.2.1. Correlation between Socio-cultural Writing Strategy Use and NMET Scores

Table 3 reports the correlation between socio-cultural writing strategy use and NMET (National Matriculation English Test) scores. It can be found that there is a significant correlation between the participants' use of *Peer Interaction* ($P = .033, < 0.05$) in their NMET scores. It is noteworthy that *Peer*

Interaction is negatively correlated to NMET. The maximum value is 3.70 in *Internet Assistance*. The minimum value is 2.81 in *Rhetoric*. In addition, only *Rule-mediated* and *Role-mediated* writing strategies are positively in relation to NMET. As the result indicates, students tend to be less skillful at taking advantage of the use of *Rhetoric* and *Peer Interaction*. Socio-cultural writing strategies including *Reading Material*, *Language Knowledge*, *Task Requirement*, *Rhetoric*, *Teachers' Instruction*, *Identity as an English Major*, and *Identity as a Student* are positively correlated with National Matriculation English Test scores.

Table 3 Use of Socio-cultural Writing Strategies in Relation to NMET Scores

Category	Mean	SD	Number	Correlation Coefficient	Sig. (2-tailed)
The outline of writing process	3.38	.78301	306	-.008	.884
Internet assistance	3.70	.79191	306	-.044	.443
Reading material	3.33	.65266	306	.030	.600
Writing exercise	3.04	.68828	306	-.015	.789
Tool-mediated strategies	3.34	.48931	306	-.013	.823
Language knowledge	3.40	.63701	306	.038	.505
application of mother tongue	3.39	.73823	306	-.067	.245
Sign-mediated strategies	3.39	.57478	306	-.009	.878
Task requirement	3.61	.68919	306	.071	.213
Rhetoric	2.81	.80201	306	.033	.565
Rule-mediated strategies	3.34	.59518	306	.070	.223
Teacher's instruction	3.71	.72041	306	.011	.850
Peer interaction	2.96	.71753	306	-.122*	.033
Model study	3.16	.81168	306	-.060	.297
Community-mediated strategies	3.30	.58438	306	-.060	.297
Identity as an English major	3.47	.73447	306	.090	.117
Identity as a student	3.62	.71333	306	.054	.349
Role-mediated strategies	3.55	.61977	306	.054	.349

Note: * means significance at 0.05.

Take Grace who won 140 points in the NMET, "But I do prefer to use rhetorical devices to render my composition more beautiful or more powerful" (Grace, translated from Chinese). These words exactly prove the positive relationship between the use of *Rhetoric* and NMET. The junior student Rachel also mentioned: "To seek for more satisfactory results, I try to apply rhetorical skills. ... You know, it is really effective to use parallelism to cite several juxtaposed examples (Rachel, translated from Chinese)". That is to say, students endeavor to apply rhetorical skills, but they are not able to master it well.

According to Zeng and Liu (2012), the test of NMET has a backwash effect on the teaching and learning of English writing. NMET has a profound impact on students' attitude, behavior and motivation, which can be used to explain why some socio-cultural

writing techniques are adopted. The poor performance at *Rhetoric* and *Peer interaction* is not repeatedly stated here. It is widely acknowledged that NMET is for testing students' English level. If students could acquire good grades in NMET, they are supposed to be proficient in language knowledge, which shall help them lay a solid foundation for future reading and learning. This kind of students may be more submissive to teacher's instruction, cultivating such awareness as task and identity requirement.

In summary, as Table 3 shows, NMET score is positively correlated with Rule-mediated and Role-mediated writing strategies. What is noteworthy is that the use of Tool-mediated strategies, Sign-mediated strategies, and Community-mediated strategies (especially Peer Interaction) is negatively correlated to NMET scores.

4.2.2. Correlation between Socio-cultural Writing Strategy Use and TEM-4 Scores

Table 4 presents the correlation between socio-cultural strategy use and TEM-4 scores. It should be pointed out that only 151 participants of the 306 respondents provided their TEM-4 scores. Therefore, we performed correlation test only on these 151 students. It can be found that there is a significant correlation between the participants' use of *Task requirement* ($P = .040, < 0.05$) and *rule-mediated strategies* ($P = .041, < 0.05$) in their TEM-4 scores. Table 4 also reports that the seven socio-cultural writing strategies, which are respectively *Internet Assistance* (-.059), *Writing Exercise* (-.083), *Application of Mother Language* (-.079), *Peer Interaction* (-.078), *Model Study* (-.157), and *Identity as an English Major* (-.048), are negatively in relation to TEM-4 scores. There are six subdivisions with the mean value over 3.4. The maximum value is 3.73 in

Internet Assistance. The minimum value is 3.00 in *Peer Interaction*. Besides, socio-cultural writing strategies like *Task Requirement* of *Rule-mediated strategy* are strongly correlated with TEM-4 scores.

According to Grace in the interviews, "My writing teacher often divides all the students into several groups, which gives us the chance to communicate with and learn from each other" (Grace, translated from Chinese). However, the sophomore student Leona said: "I use community mediated skills sometimes. When I get a writing topic, I get used to thinking independently because I need to have my own thoughts" (Leona, translated from Chinese). Therefore, this may be the reason why students show little interest in use of *Peer Interaction*. Despite the fact that teachers divide students into groups, they may prefer to think independently instead of communicating with peers. The effect of peer cooperation is thus not fruitful.

Table 4 Use of Socio-cultural Writing Strategies in Relation to TEM-4 Scores

Category	Mean	SD	Number	Correlation Coefficient	Sig. (2-tailed)
Internet assistance	3.73	.81379	151	-.059	.471
Reading material	3.37	.64927	151	.086	.296
Writing exercise	3.02	.65495	151	-.083	.308
Tool-mediated strategies	3.35	.47527	151	-.017	.836
Language knowledge	3.42	.63007	151	.104	.203
application of mother tongue	3.38	.77612	151	-.079	.334
Sign-mediated strategies	3.40	.56165	151	.026	.749
Task requirement	3.61	.65033	151	.167*	.040
Rhetoric	3.00	.77136	151	.077	.348
Rule-mediated strategies	3.41	.55497	151	.166*	.041
Teacher's instruction	3.65	.72302	151	.074	.368
Peer interaction	3.00	.66171	151	-.078	.342
Model study	3.11	.75692	151	-.157	.055
Community-mediated strategies	3.27	.55002	151	-.048	.554
Identity as English major	3.49	.65863	151	-.048	.554
Identity as a student	3.57	.68004	151	.125	.125
Role-mediated strategies	3.53	.55032	151	.136	.096

Note: * means significance at 0.05.

The results lend support to Zhao's (2007) study, which claims that writing training, teacher's teaching method and learning strategy are all remained to be improved through the grades of TEM-4. It is evident that the preparation of TEM-4 is supposed to exert a significant impact on English writing strategy use. Students whose grades are high in TEM-4 may have shaped some good habits such as learning the shining points from excellent writing, discussing with classmates or realizing the requirement of being an English major.

In a word, TEM-4 score is positively in relation to

the use of *Rule-mediated strategies*, *Sign-mediated strategies* (especially *Task Requirement*), and *Role-mediated strategies*. It is negatively correlated with the use of *Tool-mediated strategies* and *Community-mediated strategies*.

5. Conclusion

This study has adopted a self-designed questionnaire to investigate 306 English majors' use of socio-cultural writing strategies and the relationship

between socio-cultural writing strategy use and language proficiency. In the same vein, it also interviewed 12 students for acquiring more detailed information about their use of socio-cultural writing strategies. It has found that: 1) the participants displayed a medium-to-high level of using the five socio-cultural writing strategies; 2) they most frequently used role-mediated strategies in their English writing learning, which is followed by sign-mediated strategies, tool- and rule-mediated strategies, and at last community-mediated strategies; 3) Pearson Correlation Test shows that TEM -4 score is positively correlated to the use of *Rule-mediated strategies*, *Sign-mediated strategies* (especially *Task Requirement*), and *Role-mediated strategies*. NMET score is negatively correlated to the use of *Tool-mediated strategies*, *Sign-mediated strategies*, and *Community-mediated strategies* (especially *Peer Interaction*).

These findings enrich existing literature on socio-cultural strategy use. They particularly offer further empirical evidence to both quantify and qualify the use of socio-cultural writing strategies in the EFL context. The results also are indicative for English writing teaching and learning. For instance, given that the teachers are aware that students are inadequately competent at deploying the strategy of *Peer Interaction*, they are able to understand that it belongs to the *Community-mediated writing strategy*. Based on that situation, teachers may design more *Community-mediated* activities to cultivate students' ability of interacting with peers. More importantly, since English majors have a strong sense of their role as English majors, it is recommended for teachers to pay attention to strengthening the identity awareness of English majors in the writing class.

This study has its shortcomings. For example, the process of the quantitative data mainly relies on descriptive techniques. Inferential methods such as factor analysis are suggested to be applied in future research. Besides, this study mainly used the self-reported information to inquire the participants' language proficiency. Future research is recommended to adopt proficiency tests to evaluate the learners when further examining the relationship between socio-cultural writing strategy use and language proficiency. Thirdly, since strategy use is a complex phenomenon, other learner variables are also suggested to be taken into account in relation to socio-cultural strategy use.

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