



Chinese International Students' Cognitive Processes and Experiences with Online Non-academic Reading and Writing in the United States

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ABSTRACT

Second language reading and writing scholarship has primarily focused on conventional paper-mediated academic texts (Hirvela, 2016; Plakans, 2009b). As innovative technologies have emerged, students must be proficient in new literacies that take place on the Internet and other information communication technologies (RAND Reading Study Group, 2002). However, there is a lack of research in this area, especially among international students who comprise a major component of student population in US universities (Farrugia, Chow & Bhandari, 2012). To fill the gap, this study investigated Chinese international students' cognitive processes and experiences with online non-academic literacy. Twelve Chinese international students from a midwestern university in the US participated in interviews. Data was analyzed qualitatively. Findings indicate that participants took advantage of the skills that they had procured when reading and writing in school to help with reading and writing online beyond the classroom. Participants also reported that their academic literacy skills benefitted their non-academic skills, although some participants felt uncomfortable with online non-academic reading and writing due to linguistic or cultural issues. The study hopes to bring teachers, scholars, and administrators' attention to a series of informal workshops on participation in new literacy for international students.

INTRODUCTION

Reading and writing scholarship in both first language (L1) and second language (L2) literacy has focused primarily on conventional paper-mediated texts (Rosenblatt, 1994; Grabe, 2009; Hirvela, 2016). As innovative technologies continue to emerge, however, reading and writing through the platform of innovative technologies have gained attention from scholars. Leu et al (2008) conceived and defined new literacies as:

The new literacies of the Internet and other information communication technologies (ICTs) include the skills, strategies, and dispositions necessary to successfully use and adapt to the rapidly changing information and communication technologies and contexts that continuously emerge in our world and influence all areas of our personal and professional lives. These new literacies allow us to use the Internet and other ICTs to identify important questions, locate information, critically evaluate the usefulness of that

information, synthesize information to answer those questions, and then communicate the answers to others. (p. 10)

This definition of new literacies is similar to the way in which Hirvela (2016) coined the term *electronic literacy*, which are the demands and skills one develops to interact with online texts. As such, both new literacies and electronic literacy assume divergent readers/writers' processes, strategies, goals, and experiences, thus complicating any direct comparison to more traditional methods.

There is limited research that delves into new literacies, despite the continuing expansion of ICTs. This statement is supported by a RAND Reading Study Group report, which claims that "accessing the Internet makes large demands on individuals' literacy skills; in some cases, this new technology requires readers to have novel literacy skills, and little is known about how to analyze or teach those skills" (2002, p.4). Smith and Caruso (2010) also claimed that it is a widely known that one of the most popular Internet activities among college students is social media use. Within the limited amount of scholarship that addresses this type of novel literacy, even fewer works have focused on the literacy practices of international students beyond the classroom, despite the fact that such students comprise a major percentage of the university student population in English-speaking countries (Farrugia, Chow & Bhandari, 2012). In fact, these literacy practices should be given due prominence in international students' academic literacy because they contribute significantly to daily English language use, though the former has neither been extensively taught in English language class nor studied in literature. With this research gap in mind, this study aims to investigate the strategies and experiences of international students when engaging in online reading and writing beyond the classroom.

LITERATURE REVIEW

Reading and writing strategies. A significant number of L2 scholars have examined reading and writing performance in traditional paper-based texts (Esmaceli, 2002; Raimes, 1985; Zamel, 1983). However, studies on electronic-based reading and writing are dominated by L1 scholarship, and are themselves largely centered upon academic literacy (Coiro, 2003a; Coiro & Dobler, 2007; Leu, Kinzer, Coiro, & Cammack, 2004). When looking ahead of the 21st-century, Leu (2000a) clearly stressed that innovative technology has altered the traditional concept of literacy in the classroom. The complexity of electronic literacy makes reading and writing online more complex and integrated (Hirvela, 2016).

In studies that investigate the online reading comprehension strategies of skilled readers, results indicate that skilled readers tend to draw upon their topical knowledge and the printed informational text structures, using inferential reasoning strategies to guide their reading decisions (Coiro & Dobler, 2007). Self-regulated reading processes such as goal setting, predicting, monitoring, and evaluating the relevancy of online information are also employed quite frequently by skilled readers. Among these skills, critical evaluation skills are especially essential, as online information is laden with social, commercial, or political motives. Students must then be prepared to analyze, evaluate, and interact with informational texts that are found on the Internet (Coiro, 2003b). These study findings also reveal that while some tasks on the Internet demand that readers adapt and expand their use of traditional reading comprehension skills to new contexts when learning, there are other tasks that require fundamentally different sets of new literacy skills that are currently not covered in most language arts curriculums.

Ironically, the lack of a research-based understanding of the strategies needed to successfully read and understand information on the Internet coincides with how important the Internet truly is in daily lives.

In order to communicate with others on the Internet and other ICTs, readers should also be effective writers who are able to participate in online communities to receive needed information as well as know how to use e-mails and other tools to build effective communication (Leu, Kinzer, Coiro, & Cammack, 2004). A review of research on the impact of ICTs on writing shows that students engage in different skills, such as problem-solving, generative thinking skills, sequencing skills, and analysis and synthesis skills (Williams & Beam, 2019). Additionally, planning, drafting, revising, and editing are employed to improve greater fluency in the iterative phases of the writing process.

Depew's (2011) study on multilingual speakers' strategies when writing on social media reveals the linguistic features and writers' perceptions when writing online. Participants tend to use nonstandard linguistic constructions deliberately because it is not expected to see formal language in such contexts. Also, participants do not care about making errors since they see social media as a carefree platform. The findings are contradictory with Williams and Beam (2019), which may be due to the non-academic nature of writing in Depew's study.

In summary, these examples of new literacies put a demand on users to engage with reading and writing quite often. Users are also required to demonstrate and adapt certain strategies in order to successfully read and write online. The subsequent section will review literature on L2 learners' experiences with online non-academic reading and writing.

Reading and writing experiences. Scholarship has supported the notion of reading comprehension as a social activity (Gee, 2001; RAND Reading Study Group, 2002; Rosenblatt, 1994). According to those studies, reading comprehension is comprised of three elements: the text, the activity, and the reader. These elements take place within a larger sociocultural setting, which influences the way literacy learners interpret and transmit information. Reading with local technology tools and in networked environments provides exciting and new opportunities for learners to participate in social interaction and collaborate with others (Reinking et al., 1998; Coiro, 2003a). Similarly, writing online transforms the audience from one person, which is usually the teacher in a traditional writing context, to a large social community (Sweeny, 2010). This transformation of writing places greater significance on factors such as form, style, and awareness of audience. Learners can also receive instant feedback from peers and have opportunities for sharing their ideas with real global audiences, which makes communication more effective. These reading and writing practices promote learners' critical thinking, communication skills, and more in-depth understandings of the text.

A few studies on multimodal literacy practices have explored how L2 learners use social media to construct meaning, how they perceive language use on social media, and how using social media affects the way they perceive themselves (Baron, 2008; Depew, 2011; DePew & Miller-Cochran, 2010). In this scholarship, however, Depew (2011) also found that L2 students' writing on Facebook influenced the way they wrote in class because they were hyperaware of the expected type of writing requirements in different settings. Except for one participant who grammar-checked his posts and used several coordinating conjunctions to link ideas as he did in academic setting, when writing on Facebook, most participants reported using informal registers because it was an informal and carefree environment. The participant who treated Facebook writing much like his academic writing viewed Facebook writing as having a harmful impact on

academic writing and academic writing as having a positive influence on Facebook writing. Canagarajah (2006)'s notion of shuttling suggests that multilingual writers often switch their languages, discourses, and identities to reach communicative goals while travelling among changing contexts of communication, in particular—between their academic and non-academic knowledge and skills. However, what that particular participant perceived suggests “a breakdown in shuttling, or at least the perception of a breakdown, in which the register used for one cultural interaction influences—appropriately or not—the register of another. In this instance, the academic register becomes privileged by the user” (Depew, 2011, p. 67).

Additionally, some participants were also discouraged by their posts being corrected by American peers in terms of grammar errors. One participant said that she tried to be more careful when speaking with American audiences than with the people who spoke the same first language as she. Drawing on the concept of submersion, pejoratively phrased as “sink or swim,” Depew concluded that L2 learners are more likely to be submersed in online social media, when there is no “structured English immersion” offered and they are granted access to a world of “hegemonic users,” namely Westerners with linguistic and cultural capital. Rassool (2004) also made a similar conclusion that users from peripheral cultures would assimilate into the dominant culture or show deliberate acts of resistance to it. These studies imply that although the use of social media is quite prevalent among students outside of school, L2 learners have to learn how to communicate in that context on their own.

Although the above scholarship examined the experience of L2 learners in social media spaces, there is a lack of research that directly focuses on their reading and writing strategies and experiences. Polio (2017) called for a need for research on non-essay types of writing, such as computer-mediated communication. Similarly, Limbu (2012) argued that classroom instructors should not be content to exclusively teach the production of academic text. Instead, students should be prepared to share, collaborate, and create with peers both within and beyond the classroom setting. This research specifically focuses on the strategy use and experiences of Chinese international students, given that a large number of international students are currently enrolled in US universities and among which the Chinese population significantly surpasses all other populations of international students (Institute of International Education, 2006). The following research questions are examined in this exploratory study:

1. What are Chinese international students online reading and writing processes beyond the classroom in English?

2. What are their experiences with reading and writing beyond the classroom in English?

This study aims to inform scholars, teachers, and administrators of international students' non-academic reading and writing experiences and bring their attention to the importance of developing workshops on social media participation in L2.

METHODOLOGY

Setting and participants

The study was conducted at a large Midwestern university in the United States. Since the study was exploratory in nature, I embraced a diversity of participant backgrounds instead of attempting to control factors such as gender, degree level, major, and length of stay in the US. Twelve participants were recruited through flyers and convenience sampling. While all of the

participants were Chinese-speaking international students, they came from a variety of backgrounds. Table 1 provides demographic information of the twelve participants, organized by the sequence of interview.

Table 1. Participant Information

Name	Gender	Degree Level	Major
Yue	F	PhD Student	Second Language Acquisition
Ming	M	PhD Student	Music
Peng	M	PhD Student	Piano
Xiao	F	PhD Student	Educational Measurement and Statistics
Chen	M	PhD Student	Math
Fei	F	Undergraduate Student	Finance
Yang	F	PhD Student	Informatics
Nan	F	Undergraduate Student	Theater Arts & Psychology
Rui	F	Master Student	Fine Arts
Hong	F	Undergraduate Student	Business
Jing	F	Master Student	Educational Policies and Leadership Studies & Second Language Acquisition
Dong	M	Master Student	Corporation Research

Instrument and procedure

IRB approval was gained before conducting the study. In-person interviews were employed to explore participants' non-academic reading and writing processes and experiences. Before each interview, the participant was asked to complete a consent form. Interview questions were first piloted with three additional participants prior to the official implementation. Revisions such as adding or changing interview questions after the pilot session were made to more thoroughly elicit participants' cognitive processes and experiences with non-academic reading and writing. Many questions were designed in reference to L1 literature on new literacies (Coiro & Dobler, 2007) and L2 literature on academic literacy (Gebril & Plakans, 2009; Plakans, 2009b) as some processes used in these contexts can transfer to other contexts.

The interview was conducted in either English or Chinese, according to the participants' preferences. Each interview took about twenty minutes. To thank participants for participation, each received a \$10 university check.

The interviews were audio-recorded and transcribed. Translation was involved by the researcher when participants preferred to speak in Chinese. Data were segmented by each response and analyzed through In Vivo codes. Member-checking was employed to verify or

confirm the researcher's interpretation of the data (Merriam & Tisdell, 2016). Afterwards, a cross-sectional comparison of participants' cognitive processes and experiences was made. An analytical memo was kept in hand when analyzing the data.

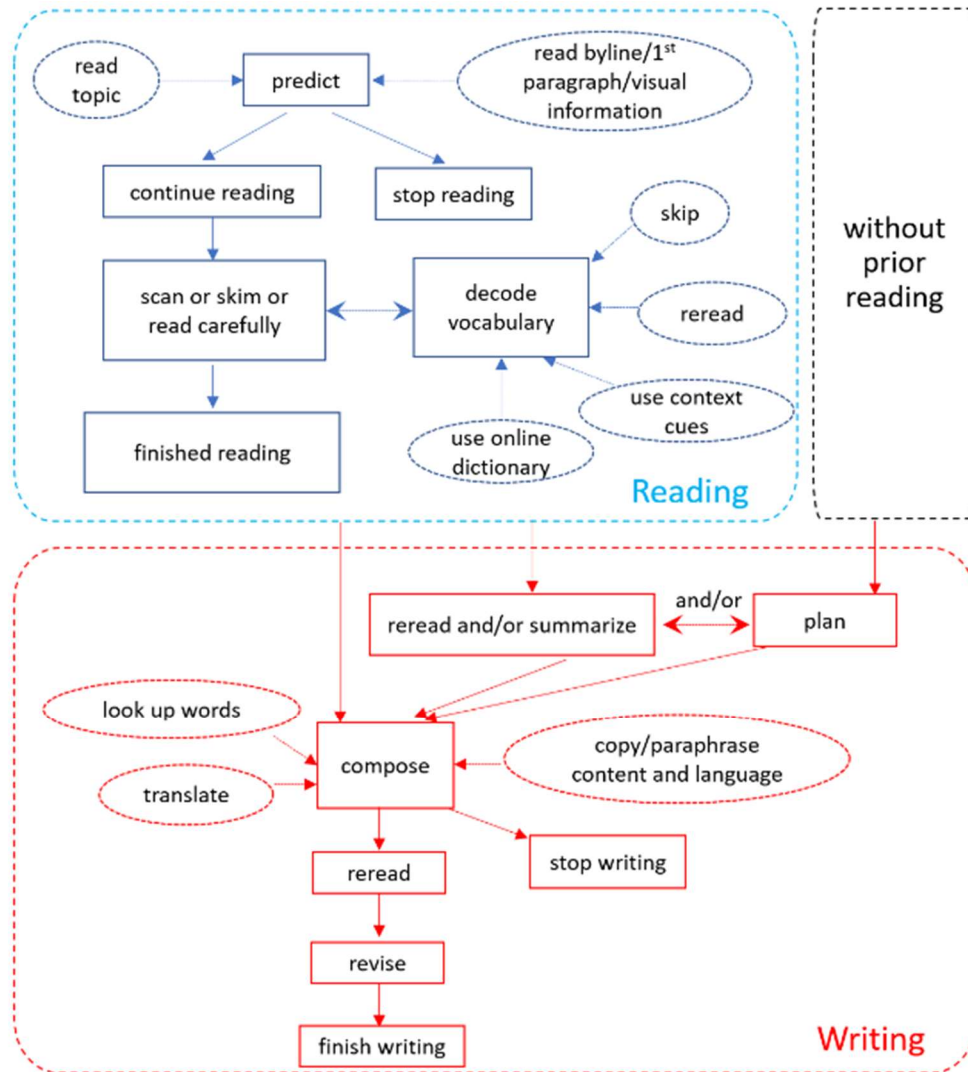
RESULTS AND DISCUSSION

Before delving into participants' cognitive processes and experiences, participants reported having experience with reading and writing a variety of texts online in English. They liked to read news articles on different topics, such as entertainment, business, and politics. Several participants reported reading novels, fiction, and blog posts. Reading on social media such as text messages and Facebook was also a way to interact with their American and international peers. A few participants also reported reading recipes and gaining information about discounts and online shopping on Pinterest.

With regard to writing, most participants said that they often wrote text messages and messages on Facebook when responding to their colleagues or friends. Several participants wrote blogs or made online diary entries. One participant said that sometimes he would chat with online customer representatives to make comments about products. There were also a few participants who reported seldom writing online outside of school due to their significant work load. An understanding of participants' reading and writing activities helps understand their processes and experiences with non-academic literacy.

RQ1: What are online English reading and writing processes of Chinese international students beyond the classroom?

Because of the informal nature of online reading and writing beyond the classroom, participants' online reading and writing processes shared similarities and differences with their academic reading and writing processes. Figure 1 illustrates an overall picture of participants' reading and writing processes.

Figure1. Overall Online Non-academic Reading and Writing Processes

Reading Processes. To begin reading, participants reported reading the title, the byline, the first paragraph, or any additional visual information that was presented to them throughout the text to predict the content of the text and deduce whether they should continue reading. If they were intrigued by the information and were interested in knowing more about the text, they often continued reading; if not, however, they simply stopped reading and moved on to other texts. Given the large quantity of information online, the ability to predict from the text gave them an opportunity to be selective about their chosen reading materials. The prediction skill here has a similar function as the critical evaluating skill proposed by Coiro (2013b), which helps readers effectively identify useful information from the vast amount of texts online. For instance, Yang said,

“Actually, I first read the title, and then I will read the first paragraph, the first line for each paragraph and get the general idea for each paragraph, and then I will find what I'm interested in, and then read the details for that paragraph.”

Unlike from Yang's detailed reading process for judging text content, Chen said,

“While doing reading something online, because I choose to read it of course I will choose something interesting to me to read, and the only way to find something interesting is the title itself, which is most easy way obviously.”

Although in this response, Chen did not explicitly express an awareness of predicting the content by first reading the title (after which he selected the text he was most interested in) he did acknowledge the role of the title.

Once participants decided to continue reading, they usually scanned the entire text quickly to find important textual and visual information or read the text word by word; the latter choice, however, was less popular among the participants. As Dong recalled,

“That really depends on the content of the news because sometimes to me, if it's more of technical news- there are a lot of technical information inside it- I will go word by word because I do not want to miss any news of advanced technology, but for as a general idea, like news in the neighborhood like some place caught a fire or which bridge is going beyond construction, for those I just read very briefly over the paragraphs to see what's going on and where and that's it.”

In addition to online news, Chen reported that he used visual representations to identify useful information, saying,

“I want find the best credit card to use so I try to rent a car. Maybe a title he has ten best credit card for rental car. So I will quick go over jump to a table maybe... if it's ten best- they started probably from the tenth to ninth, to the first backwards. I of course roll down all the way to the first three. It depending on how they manage the page. But if they rank the- from one to ten, okay, I stop reading after like maybe top five.”

Chen's example suggests even with visual representations, he was selective in reading due to the large amount of information presented.

Although most readings pursued outside of the school were quite informal and thus did not require serious attention, some participants reported reading word for word when the information was important to them. For example, Yang said,

“When I want to buy a new cloth online, I will read the comments from the customers that bought their clothes previously, just for those information, I will read the detail information, not just for fun because it will give me more information on my decision, on whether to buy it or not. It will give me some indications on the size of the clothes.”

Yang's interview revealed that if a text provided useful information, she treated it as seriously as she would an academic text. This suggested that, depending on the purpose of the reading, participants will adjust their reading process and strategy accordingly.

When encountering unknown words, participants reported employing different strategies to decode, such as looking them up in an online dictionary, using context cues, rereading, skipping the word(s), or employing a combination of several strategies. Among these strategies, rereading was used in conjunction with at least one other strategy. For example, many participants reported rereading a portion of a text that they were confused about over several attempts. If they were not able to understand the meaning, some participants would use an online dictionary (either English to Chinese, or English to English), to check for unknown vocabulary or phrases. Chen explained how he used different dictionaries based on the various types of unknown vocabulary, saying,

“For example, last time figure out the phone is- they talk about it could be a form of a limit switch, okay? I know both the word limit and the switch. I'm not looking for to translate it into Chinese, because you won't be translating into Chinese, I probably don't

know what that mean. So instead I actually search online for what a limit switch is. There's many things that if I don't know English, I probably don't understand it in Chinese either. So instead of searching Chinese, I more likely to figure out what exactly this thing is. However, it does has some situations that translating into Chinese helps a lot. Like the medical terminologies. Because some word in Chinese it's – 糖尿病 (tangniaobing/diabetes)- although I don't really know all the details how to define this disease, but if they translate to 糖尿病 (tangniaobing/diabetes) I can understand right away.”

In addition to the use of a dictionary, participants also reported guessing the meaning of unknown words based on surrounding information. If the vocabulary words did not affect text comprehension, skipping was often employed. Ming recalled skipping unknown vocabulary when reading and shared the following thoughts,

“Uh, not that often bec, but if I think this word is very important for understanding this phrase, that in a sentence I'm gonna look it up. Yeah. But generally, I don't check. I don't wanna spend that time.”

Overall, participants selectively read online materials by making predictions based on the visual or textual information, before reading it more thoroughly for details. Skimming and scanning are often used to gain an overall idea of the text, though reading the text word by word can be required for a deeper understanding. Participants often adopted multiple strategies to help them cope with the language issues that emerged during the reading process.

Writing Processes. Several participants reported keeping a blog or taking notes after reading online articles or texts or using social media to capture their thoughts. When writing reflections or taking notes after reading an online text, participants reported employing different strategies when composing, including rereading the previous text, summarizing main ideas, and planning. Some participants relied on one of the strategies, while others used a combination of two or more strategies, especially if the reading had been completed prior to writing. Hong reported that she kept a blog or online journal to detail what she had read online. She would summarize major information during the reading process, which allowed her to start writing immediately afterward without having to reread the text. Also, since writing was only for herself, instead of for the public, she did not plan out her ideas prior to writing. In Peng’s case, pre-writing strategies were largely unnecessary when responding on social media, as it did not require too much planning or organization of ideas. Additionally, participants such as Xiao and Jing reported writing text messages to her friends or blogs without prior reading of any information. Their writing process began with only brief cursory planning – or sometime no planning at all – since writing on technological devices allowed them to revise at any time.

When taking notes or writing journal blogs about news and stories, participants often copied and paraphrased content and language, in addition to incorporating their own thoughts into the texts. The language that they copied from the text most often included specific terms and exquisite expressions that they hoped to borrow and learn. This result suggests that participants often incorporated language borrowing and patchwriting in their informal online writing in order to increase their language repertoire and avoid repeating the same words, phrases, or sentences. Similarly, L2 academic writing research showed that L2 writers attempt to learn how to appropriate source texts through patchwriting, which is defined as writers using different words to replace the words in the original texts (Hirvela, 2016). Abasi and Akbari (2008) pointed out that L2 instructors and materials also unintentionally suggest patchwriting to students to prevent

them from plagiarizing. Thus, writing in either academic or non-academic settings has shared strategies and perceptions of employing language borrowing or patchwriting among L2 writers. What is different from academic writing (where patchwriting is considered a type of plagiarism) is that patchwriting is quite common among individuals writing informally or for themselves.

Other approaches to composing online include translation, though most participants claimed they avoided translating from Chinese to English when writing because they automatically thought and wrote in English or had difficulty with translation. For example, Nan reflected her experience of writing journal blogs, saying, “I’m bad at this. It’s difficult to translate. Think them all in English or think them all in Chinese. It’s hard to combine them together when I think.” Unlike Nan, other participants translated while writing due to a strong influence of L1: “yeah, I cannot omit that [laughs]. I will first think in-in Chinese and then express it in English” (Yue). Rather than thinking entirely in Chinese, Fei stated that she wrote her blog by translating Chinese idioms into English and rewriting them to ensure clarity among her American audience, saying,

“that there are some words we use but, like 成语 (chengyu/idiom), but other American people I should say, just don’t really understand. So you need to try-translate 成语 (chengyu/idiom) like more common, more easier phrase”

As Canagarajah (2006) claimed, multilingual writers switch their languages, discourses, and identities when writing in different contexts in order to achieve communicative objectives. Fei was aware that her American audience may not be able to understand Chinese idioms if she translated literally or word by word because idioms often do not have equivalents in another language. In order to make idioms understandable to speakers of other languages, Fei believed that she should employ additional approaches to facilitate translation.

In addition, due to the informal nature of online writing, neither checking nor revising were common practices among the participants, which is similar with the research findings of Depew (2011). Many participants said, however, that they checked and revised before they published or sent their writing out, though for different reasons. Peng’s motivation for checking and revising was due to the fact that English is his L2. Writing may contain some errors in his initial draft, and as such checking and rewriting helped Peng identify and correct those errors. In addition to the lack of confidence when writing in a L2, the automatic error detection in online writing processors notifies participants of errors, allowing them to revise before publishing. Instead of taking the initiative to check for errors, participants such as Jing tended to rely heavily on the automatic error detection to catch their mistakes.

Unlike the above participants, Chen acknowledged that he rarely checked his writing before submitting in informal contexts. Interestingly, he reported waiting for 15 seconds before sending an email to professors or colleagues so that he had time to reread and revise his emails due to the many errors in his writing. When writing outside of the school, however, he did not spend extra time checking the text before publishing it, and as such his texts often contain several typos.

Overall, participants reported using a combination of strategies to compose online, and acknowledged that such writing was more informal beyond the academic sphere, often times because they were only writing for themselves. Writing with and without prior reading had some influence on strategy use, though the effects were not always evident. Despite the informal context and intended audience of online writing, some participants also took advantage of the skills that they had procured when writing in school; these included copying and patchwriting

sample words or structures. Translating, checking, and revising were occasionally employed to produce a more accurate and complete picture of the provided text.

RQ2: What are the participants' experiences with non-academic reading and writing?

Most participants felt comfortable with non-academic online reading and writing, given its nature as a type of daily literacy practice outside of school. However, a small number of uncomfortable circumstances were reported. Participants such as Xiao and Nan reported not being completely confident with the practice due to the unknown vocabulary. Xiao, for instance, recalled reading the news during the US presidential campaign, saying,

“Every one of us, probably people around me, including myself, is very curious about that [US presidential campaign]. But even, when I'm reading online news, probably because I don't have much information. Well, I don't know much about the politics, so-- I feel like, even I'm reading, I know the word, or I just probably don't get much of that. Sometimes, I don't think I understand what I'm reading.”

The terminology in the political news and other culturally-embedded terms created challenges of reading comprehension for international students. As Nan recalled, having to rely on dictionaries or online search engines to understand such language when reading English stories was often burdensome, which made reading online less enjoyable.

Other participants reported similar sociocultural concerns. Fei, for instance, said that when she was reading responses under her posts, she tended to attribute the divergence of ideas to cultural differences (between people who spoke different languages) and as personality differences (between people who spoke the same first language). She stated,

“You may have a question or sometimes you're just angry, how can this person don't understand me... So you may think, oh, because we are from different culture, so we may think different ways. But if you find someone is also Chinese or so, and they have total different ways than you, so you will try to find out what, the first thing reasons I believe it's the personality.”

Due to such cultural differences, Fei experienced frustration when she was misunderstood by speakers of other languages. While she hoped others to put themselves in her shoes, it is actually nearly impossible for people including those who speak the same first language with her to share a common understanding. This sense of frustration is due to what Holliday (1999) called small cultures which is defined as “any cohesive social grouping” (p. 237). Thus, when Fei experienced frustration when speaking to someone of the same culture (particularly the big culture defined by Menard-Warwick (2009) as “large, essentialized, abstract groupings of people, such as nations” (p. 31) she interpreted this divergence of thoughts as a personality difference, which is actually more about diversity among small cultures.

Additionally, Fei reflected that she often perceived challenges when the texts were written by native English speakers. She explains, “sometimes, I'm not sure I understand their post correctly. So, if I misunderstand it, I may post something, if not please them, or if just was totally different things.” Fei's interview suggests that she views reading as providing a shared source of content that is used for writing responses, which echoes the concept of reading for writing or source-based writing in academic writing research where readers/writers use text(s) they read, or have read, to develop writing (Hirvela, 2016). However, it is interesting that the way Fei views writing as a means to communicate and generate pleasant information to native

speakers. This could be explained by Rassool (2004) that L2 learners are aware of their peripheral cultures and thus tend to assimilate into the dominant culture.

With regard to writing online, participants varied as to whether they thought they would write differently if they had certain information about their intended audience (for instance, if the audience included native speakers of English, those who shared the same first language, or those who spoke a different first language). Some did not feel uncomfortable about having this information, though others reported not feeling as confident if they knew the texts they were writing would be read by native speakers. Such participants were afraid of having errors in their language, potentially complicating the comprehension level of their native-speaking audience. Another reason of being unconfident was due to the perception that writing should not bring unpleasant information to the audience, as what Fei described above.

Overall, participants reported feeling positive about online reading and writing due to its informal context. The challenges that emerged from this type of non-academic literacy practice were often related to language and sociocultural barriers, which often occurred either while reading the text or responding to others.

Additionally, participants also reflected on their non-academic reading and writing experience from the perspective of academic literacy. Most participants explicitly acknowledged the influence of academic literacy on their non-academic literacy, while others identified the influence implicitly. For those who explicitly identified the influence, they reported a facilitating effect from academic literacy on their non-academic literacy; in other words, reading and writing at school developed the necessary language proficiency that facilitated participant literacy and strategy competence. For example, Peng attributed his ability to read and write non-academic texts to the challenging nature of academic texts:

“I think it helps. Because academic reading and writing are much harder. I will be much more careful about my grammar and how I will phrase my sentences and also, the reading part is much harder because it's DML Level text book.”

Peng believed that his PhD level-textbooks, referred to as DML in the field of piano, required much more extensive cognitive demands. For instance, when he was taking history classes on piano for his program, the reading was both intense and challenging. The situation was also true for academic writing, which required a generous amount of attention to details. Thus, when reading and writing outside of school, he had sufficient language ability to understand and produce texts.

Similar to Peng, Nan stated that academic reading required a lot of strategies, including how to read an electronic book. When reading for other purposes, therefore, she had no difficulty reading online. Nan's case suggests that she is able to transfer skills across different settings, similar with Coiro's (2003a) finding of skill transfer from traditional paper-mediated texts to online texts.

In addition to the language knowledge and strategic competence that are enhanced by academic reading and writing, participants such as Rui believed that reading and writing for school changed her dramatically, particularly by developing her critical lens:

“The first thing is the school always trained me to be more critical. I think I bring that part of me to anything I read. I will just be a critic spontaneously...”

Through her master's degree in fine arts, Rui learned to be a critical reader and writer of countless pieces of information and was thus able to tell the difference between a fact and an opinion. When reading online outside of school, therefore, she was able to apply such aspects in order to identify the writer's intention.

Only a handful of participants reported being only partially influenced by academic reading and writing. Hong attributed this lack of influence to a lack of overlap between her academic texts and the work she reads and writes inside and outside of school. By contrast, Chen believed that his non-academic writing was more advanced than his academic writing, and that the latter did not fit the requirement for academic genre:

“I was told that my academic writing is too 口语化 (kouoyuhua/conversational)... There is more rather than academic papers. Too many, everyday English word [in academic writing]. Because I feel if you're writing-writing the way you're writing the paper, people definitely think you're nuts.”

Chen thought that academic and non-academic writing both have conflicts and that transgressing to academic genres in non-academic settings made the pragmatics of writing problematic. Later in the interview, Chen recalled his experiences writing and publishing Chinese poems at a young age, which could explain his struggles with academic writing, especially in a L2. This is because of his familiarity with non-academic writing, which makes it difficult for him to switch tones from non-academic to academic writing. Although Chen denied the connection between academic and non-academic writing, he spoke to the implicit influence from the latter.

To conclude, most participants had experienced the influence of academic literacy on non-academic literacy even though some participants denied such an influence. The majority of participants reported that their experience with academic university work benefitted their online non-academic reading and writing activities in terms of either language knowledge or strategic competence. They constantly shuttled back and forth between their academic and non-academic knowledge and skills; this process relates to Canagarajah (2006)'s notion of shuttling, in which multilingual writers switched their languages, discourses, and identities to achieve communicative objectives while travelling among changing contexts of communication. Other participants were able to transfer their critical lens from academic settings to non-academic settings when making judgements about various pieces of information. Finally, from a social pragmatic perspective, some participants experienced a negative influence of non-academic writing on academic writing due to the latter's emphasis on standard English; Chen's academic writing, for instance, having been impacted by non-academic writing, as considered too conversational by his peers. Participants' responses demonstrated a diversity of views, but mostly reflected a positive influence of academic literacy.

CONCLUSION

This study investigated Chinese international students' cognitive processes and experiences with online non-academic reading and writing. The findings of this study reveal that participants employed multiple sets of strategies to facilitate their reading and writing activities; similar strategies (including predicting, rereading, checking for unknown vocabulary, paraphrasing, and revising) were utilized when encountering academic reading and writing. Among these reading strategies, participants frequently used predicting (for instance, by reading the title or visual representations) to selectively read online texts and evaluate their relativeness. Identified also by Coiro (2003b), this phenomenon suggests that critical evaluation skills are essential in supporting the reading of hypermediated texts due to the complex nature of online information. When writing online beyond the classroom, for instance, participants had a less restrictive perception of plagiarism than what they applied to academic writing. In the reading

texts, language borrowing and patchwriting from the source were employed quite often to avoid plagiarism and to instruct participants on how to incorporate sources into their writing (Abasi & Akbari, 2008; Hirvela, 2016).

Additionally, despite the fact that there is no formal instruction on non-academic literacy, participants were able to transfer some academic skills when reading and writing beyond the classroom. However, similar to the findings of Depew (2011) and Rassool (2004), international students did not feel confident when their texts were read by native English speakers, aware as they were of their periphery culture when socializing with such native speakers. They also experienced obstacles with certain cultural concepts, such as the presidential campaign. Despite the challenges faced by Chinese international students that are identified in the study, however, findings suggest that students have the potential to become effective readers and writers outside of the classroom if they have support to address these challenges. Therefore, this study argues that a series of informal workshops on how to read and write online beyond the classroom should be offered to assist Chinese international students wishing to develop and strengthen their non-academic literacy; this objective may include, for instance, developing genre familiarity when performing various writing activities (e.g. emails, text messages, blogs), transferring certain academic literacy skills (e.g. setting goals, quickly identifying relevant information, monitoring), and demystifying cultural barriers with online literacy (e.g. an overview of American presidential campaign). Ultimately, the academic and non-academic literacy practices will not only constitute international students' multiple literacy skills, but will also grant them the opportunity to have a rewarding experience when studying abroad.

LIMITATIONS

Because the study only employed interviews instead of actually observing participants' reading and writing online beyond the classroom, caution should be taken when interpreting findings. However, as previous studies argue that it is impossible to conduct a controlled comparative study due to the very nature of reading and writing, it should be noted that online text is substantively different from reading and writing traditional academic texts. Instead, this exploratory study offers a great deal of insight about the concerns that many Chinese international students have about non-academic literacy, and hopes to help L2 scholars, instructors, and program directors to develop their understanding of the distinction between social literacy and traditional academic literacy, as well as the obstacles that many international students experience. This study provides implications for what scholars, teachers, and administrators can do to better prepare international students when they are beyond the classroom. Future studies could use more direct research methods (for instance, observation) to explore international students' processes and experiences with non-academic literacy texts. Another limitation of this study is that it only investigates a particular group of international students' online literacy practice, which restricts the generalization of the study's findings to other language-speaking groups. Future studies should therefore delve into other populations to build a more comprehensive understanding of the online literacy practices of international students.

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