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Researching the use of WebCT in Chinese language teaching and learning

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Researching the use of WebCT in Chinese language teaching and learning

by

De Zhang

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Education (Curriculum and Instructional Technology)

Program of Study Committee:
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Iowa State University
Ames, Iowa
2007

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To my dear child, Peilan
TABLE OF CONTENTS

LIST OF TABLES v

LIST OF FIGURES vi

ACKNOWLEDGEMENTS vii

ABSTRACT ix

CHAPTER 1. INTRODUCTION
   General introduction 1
   Researching technology integrated Chinese language classrooms 2
   Researching diverse language learners in real classrooms 3
   Researching and designing the use of technology in real classrooms 3
   Overview of the dissertation chapters 7
   References 11

CHAPTER 2. RESEARCH ARTICLE 1: TEACHING
   CHINESE TO CHINESE AMERICANS: A CRITICAL
   MULTICULTURAL APPROACH 14
   De Zhang & James Mcshay
   Introduction 14
   What is Critical Multiculturalism? 19
   Heritage language education and multicultural education 19
   Research context 21
   The ethnographic research approach and data collection 22
   Research participants 23
   Findings and discussions 26
   Teachers as critical researchers 42
   Conclusion 44
   Acknowledgements 45
   References 46

CHAPTER 3. RESEARCH ARTICLE 2: STUDENTS’ ATTENTION
   TO FORM IN DIFFERENT DIMENSIONS OF INTERACTION
   IN CHINESE WEBCT 53
   What is focus on form (FonF)? 54
   Chinese Pinyin and characters 58
   FonF for heritage learners 59
   A classroom descriptive study 60
      The context and the researcher 61
      The research questions 62
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research participants</td>
<td>62</td>
</tr>
<tr>
<td>Data collection and analysis</td>
<td>64</td>
</tr>
<tr>
<td>Results</td>
<td>67</td>
</tr>
<tr>
<td>Limitations of the study</td>
<td>82</td>
</tr>
<tr>
<td>Implications and conclusion</td>
<td>83</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>84</td>
</tr>
<tr>
<td>References</td>
<td>84</td>
</tr>
<tr>
<td>CHAPTER 4. RESEARCH ARTICLE 3: ESSAY WRITING IN A CHINESE WEBCT DISCUSSION BOARD</td>
<td>93</td>
</tr>
<tr>
<td>Introduction</td>
<td>93</td>
</tr>
<tr>
<td>Research and instruction site, and research participants</td>
<td>95</td>
</tr>
<tr>
<td>Research methods</td>
<td>97</td>
</tr>
<tr>
<td>Designing the essay writing task</td>
<td>99</td>
</tr>
<tr>
<td>Description of the essay writing task</td>
<td>105</td>
</tr>
<tr>
<td>Findings</td>
<td>109</td>
</tr>
<tr>
<td>Reflections on implementation and pedagogical issues</td>
<td>119</td>
</tr>
<tr>
<td>Discussions and implications for classroom instruction and research</td>
<td>121</td>
</tr>
<tr>
<td>Limitations of the study</td>
<td>124</td>
</tr>
<tr>
<td>Conclusion</td>
<td>124</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>126</td>
</tr>
<tr>
<td>References</td>
<td>126</td>
</tr>
<tr>
<td>Appendix A: Writing rubrics</td>
<td>134</td>
</tr>
<tr>
<td>Appendix B: Chinese 202 essay writing peer review instruction</td>
<td>136</td>
</tr>
<tr>
<td>CHAPTER 5. CONCLUSION</td>
<td>139</td>
</tr>
<tr>
<td>Major themes and discussions of the findings</td>
<td>140</td>
</tr>
<tr>
<td>Limitations of the research</td>
<td>149</td>
</tr>
<tr>
<td>Implications of the research</td>
<td>150</td>
</tr>
<tr>
<td>Recommendations for future research</td>
<td>152</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>154</td>
</tr>
<tr>
<td>References</td>
<td>154</td>
</tr>
<tr>
<td>APPENDIX A. SUBGROUPS OF THE LEARNERS AND THEIR INSTRUCTION TIME IN CHINESE 201 AND 202</td>
<td>159</td>
</tr>
<tr>
<td>APPENDIX B. PEER REVIEW OF RESEARCH</td>
<td>160</td>
</tr>
</tbody>
</table>
LIST OF TABLES

2.1 Demographic information about the six ABC students who participated in the study 24

2.2 Summary of the ABC heritage learners’ self-assessed and tested Chinese language proficiency at the beginning of Chinese 201 (by September 15, 2004) 25

2.3 Students’ reading test results and length of their essays in Chinese 202 42

3.1 Number of research participants in Chinese 201 and Chinese 202 64

32. Different learners’ focus on form in online chats 71

4.1 Research participants’ demographic information 97

4.2 Number of essay writing messages posted in WebCT discussion board (including all drafts and reviews) 110

4.3 Number of essay writing messages posted by learner groups 110

4.4 Students’ self-chosen essay topics 113

4.5 Length of the students’ essays 115

4.6 Number of tests in Chinese 202 118

4.7 Test results of Spearman’s rho correlation between lengths of the essays and the test scores 119

5.1 Comparison of the test scores of American-Chinese heritage learners and non-heritage learners 152
4.1 Screenshot of the WebCT discussion board of “Writing exercises” and the first threads of messages containing the essays 106

4.2 Screenshot of the essays on the topic “My High School/College Life” in WebCT discussion board 107

4.3 Screen shot of a peer-reviewed and revised draft of a Chinese essay titled “My High School Life” A peer-reviewed and revised draft of a Chinese essay titled “My High School Life”) 107

4.4 Screenshot of the four collaborative groups in WebCT discussion board 108
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ABSTRACT

This dissertation aims to fill the void in the literature on Chinese language pedagogy, research of technology use in real language classrooms, and research on heritage learners. The major goal of the research was to investigate diverse learners’, especially the heritage learners’, needs in order to identify well-grounded pedagogical innovations and desired learning outcomes in technology-integrated Chinese language classrooms. Adopting multiple theoretical frameworks and research methods, the three research articles included in this dissertation were designed to ensure that the learners, tools, and learning tasks were investigated in order to present a comprehensive and systematic look at the design, implementation, and evaluation of the use of Chinese WebCT in college-level Chinese language classes mixed with heritage and non-heritage learners in a U.S. Midwest university.

Chapter 2, “The Teaching of Chinese to Chinese Americans: A Critical Multicultural Approach,” reports on an ethnographic study of six American-born Chinese (ABC) heritage learners, presenting a portrait of these learners and their learning experiences in this White-dominated university. This study also indicates the complexities of the education of heritage learners in such a context. The WebCT online learning environment is seen to provide a useful venue to research heritage learners’ learning needs, process, knowledge-sharing and construction, and identity negotiation and development.

Chapter 3, “Students’ Attention to Form in Different Dimensions of Interaction in Chinese WebCT,” addresses a learner-centered issue, focus on form (FonF), and its impact on the pedagogical practices in blended Chinese language classes. This study sheds light on Chinese classroom instruction because focus on form itself challenges the traditional mindset of Chinese teachers who tend to assume an authoritative role in the classroom and depend on
pre-planned syllabi and textbooks. The pedagogical implications of the study illustrate the value of learner-centered learning environments and language pedagogy with technology integration.

Chapter 4, “Essay Writing in a Chinese WebCT Discussion Board,” describes and evaluates a specific learning task—essay writing. This article presents the pedagogical design and evaluation of the appropriateness and effectiveness of an essay-writing task in the Chinese WebCT discussion board for diverse learners. It illustrates the power of a well-designed language learning task using the asynchronous CMC tool in WebCT.

Overall, the research findings suggest that (1) with theoretically and pedagogically sound design of the learning tasks and environment, technology is powerful in terms of scaffolding students’ language learning, creating an online learning community, and providing effective and innovative classroom instruction; (2) there is value in a mixture of heritage learners and non-heritage learners in classroom teaching and research as long as the learners have many opportunities for interaction; (3) researching my own classroom and teaching practices led to better understanding of my students, the learning process, my pedagogical beliefs, and to improvement of pedagogical practices, which reveals the promise and power of action research.
CHAPTER ONE

INTRODUCTION

General introduction

This dissertation is a documentation of a teacher and researcher’s efforts in designing, implementing, and evaluating the use of Chinese WebCT in college-level Chinese language classes consisting of diverse learners in a U.S. Midwest university. Playing the multiple roles of instructor, designer, and researcher, I participated in every stage of the development, implementation, and evaluation of the two Chinese courses integrated with Chinese WebCT. The motivating force behind this dissertation research was to explore what, when, and how Chinese WebCT would work for heterogeneous Chinese language learners in real language classrooms and to discover how technology could be implemented effectively to meet the learners’ needs and to enhance learning outcomes in a technology-rich learning environment. This motivation, on the one hand, was to answer the calls in the field of language learning and technology, for instance, Zhao’s (2003) call that “we cannot ignore the practical question of how and in what ways technology uses are effective in improving language learning” (p. 23), and, on the other hand, to meet the real-world needs of instructional design and pedagogical considerations as a teacher of these two Chinese language courses. Furthermore, I aimed to develop professionally during these processes. The dual motivation and its practical needs enabled me to address some of the major problems in the field: (1) the disconnection between research and practice; (2) the exclusion of certain populations of learners; and (3) the lack of research on less commonly taught languages in the U.S., such as Chinese.
1. Researching technology integrated Chinese language classrooms

Although existing research literature has revealed numerous benefits that technology provides to language learners, some researchers have pointed out problems in the literature and questioned the applicability of the research findings to classroom practices. One problem is that more research is needed on less commonly taught languages, now the “critical” languages, such as Chinese. For example, with an awareness of the dominance of literature on English and other frequently taught European languages, Zhao (2003) and Smith (2001) suggested that research on use of technology in language learning and the scope of CMC inquiry should be expanded to other less commonly taught languages. In the field of teaching Chinese as a second/foreign language, there has been a lack of research on pedagogy either at the theoretical or practical level (Chi, 1996). Given the complexity of the Chinese language dialects and writing systems, more research is needed either in the traditional classroom or in the technology-integrated classrooms to inform Chinese language instruction.

Another contribution of this dissertation research may lie in its real classroom context and its goal to inform systemic technology integration into language curriculum by researching the complexities of comprehensive technology integration in real language classrooms. For example, Zhao (2003), in a meta-analysis of literature review on technology and language learning, found that current uses of technology in language teaching and learning are rather fragmented and isolated. Similarly, Smith (2001) noted that research work on computer-mediated communication (CMC) and language learning either occurs in a theoretical vacuum or is conducted under highly experimental conditions which hardly resemble real second or foreign language instructional settings; therefore, the applicability of these research findings into classrooms becomes questionable.
This dissertation research was conducted in two real Chinese language classrooms. Technology integration was carefully designed and the researched population included all the subgroups of learners in the classroom, which will be introduced in the following sections.

2. Researching diverse language learners in real classrooms

Language educators and researchers have drawn attention to a problem in existing literature—the learner population researched in most studies. As Ortega (2005) stated that “in many studies only ‘pure’ foreign language learners are included in order to improve our ability to generate causal explanations by controlling as many background variables as we can” (p. 433). She concluded that researchers’ practice of “making certain populations invisible while naturalizing others has deleterious consequences from ethical, epistemological, and methodological standpoints” (p. 434). Thus, Ortega called for a concerted efforts to “investigate a wider range of L2 populations and contexts for L2 learning and teaching” (p. 434). To answer her call, this dissertation research investigated all the learners, heritage and non-heritage learners in the classes, although with a particular focus on Chinese American heritage learners.

3. Researching and designing the use of technology in real classrooms

Because the research was done in real language classrooms, the use of technology was aligned tightly with the pedagogical considerations for learners and instructional practices. Multiple theoretical perspectives informed, guided, and underpinned the design of the use of technology.

Bransford et al. (2000) warned that technologies do not guarantee effective learning, and inappropriate use of technologies may hinder learning. As Craighton (2003) stated, “The effective integration of technology has more to do with teaching pedagogy,
and very little to do with technology itself” (p. 1). Similarly, Furstenburg (1997) remarked that the interactive, collaborative, and process-oriented features of technology represent its best assets, which necessitate the development of new pedagogical practices.

The importance of design and pedagogical consideration has received much recognition in technology use, and the field of language learning is no exception. Fotos and Browne (2004) indicated that language teachers need to carefully design, implement, and evaluate computer-assisted language learning activities in the classroom. Recent years have seen increasing literature on design of technology use in language learning and on the development and evaluation of the new pedagogical practices. For example, Basanta (2004) discussed the pedagogical aspects of the design and content of an online course for the development of lexical competence and established some methodological guidelines for the implementation of the virtual course. Similarly, Simina and Hamel (2005) provided a framework which integrates all four language skills from the perspective of social constructivism and demonstrated how social constructivism supports and promotes computer applications in second-language acquisition. Moreover, Simina and Hamel (2005) illustrated the value of the social constructivist approach for the design and evaluation of computer applications in second-language acquisition.

Drawing on SLA principles, sociocultural and constructivist theories and concepts taken from the latest research on multimodality and new literatures, Hampel (2006) provided a framework for using tasks in synchronous computer-mediated communication (CMC) and evaluated the implementation of the framework in practice. The research findings of the studies reported in this dissertation also illustrate the necessity and importance of appropriate design of the learning environment, tasks, and technology use.
Instructional tools and strategies must be based on some theory of learning and cognition (Bednar, Cunningham, Duffy, & Perry, 1995). The design of the learning experiences in the two classes that I taught was based on social constructivism, sociocultural theory, and the interactionist perspective of second-language acquisition (SLA).

Social constructivist perspectives focus on the interdependence of social and individual processes in the co-construction of knowledge (Palincsar, 1998). Because language is socially and culturally oriented, language learners need to draw on their experiences to understand its meaning and uses. In the classes I taught and researched, the heterogeneous learners had diverse learning experiences and different exposure to Chinese language and culture, so a social constructivist approach was appropriate for language learning.

Simina and Hamel (2005) introduced a framework they were developing for SLA computer applications using a social constructivist perspective. According to them, technology is capable of providing the context for collaboration and social interaction that learners need to construct the knowledge of the target language by engaging in meaningful learning activities. Technology provides four dimensions of interactions in distance education: learner-instructor, learner-learner, learner-content, and learner-technologies resources. Simina and Hamel (2005) argued that the framework integrates all four language skills in a general theoretical framework of social interaction and showed how social constructivism can promote SLA.

In addition, Palinscsar (1998) indicated that social constructivist perspectives “have been extremely useful to understanding and describing the complexities of
teaching, learning, and enculturation into schools” (p. 371). Social constructivism might also be able to provide meaningful learning for all children, especially for those who are linguistically and culturally diverse. Moll (1992) suggested the following:

In studying human beings dynamically, within their social circumstances, in their full complexity, we gain a more complete and … a much more valid understanding of them. We also gain, particularly in the case of minority children, a more positive view of their capabilities and how our pedagogy often constrains, and just as often distorts, what they do and what they are capable of doing. (p. 239)

In this class, two third of the students were heritage learners who were minority students in the U.S. mainstream educational context. A socio-constructivist approach helped me gain insights into my understanding of the heterogeneous learners’ motivation, beliefs, identity development associated with language learning, and their knowledge and experiences with Chinese language and culture.

To summarize, this dissertation aims to address the problems identified above with studies conducted in technology-integrated Chinese language classes consisting of diverse learners—traditional foreign-language learners, American-born Chinese (ABC) heritage learners, and international heritage learners—including both college students and high school students in a Midwest university. Multiple theories and the latest research literature underpinned the design of the use of technology in the two Chinese language classrooms, and the effectiveness of the design was evaluated.

This dissertation also aims to expand the current research literature, which tends to focus on isolated computer-assisted language learning (CALL) activities or use of one or two specific technologies, by researching the Chinese WebCT-supported online learning environment with a holistic approach to seek a comprehensive and systematic development
and evaluation of the curriculum and content in Chinese language learning. The use of WebCT and the tasks and activities were carefully designed. It is hoped that this dissertation research will encourage language teachers to adopt a holistic approach instead of separating activities and interpersonal activities (Felix, 2003) in creating an online environment. Therefore, the holistic approach adopted may shed light on systematic integration of educational technology into the whole language curriculum.

The remainder of this introductory chapter will present an overview of the organization of the dissertation and the rationale for including these three research articles in the dissertation.

**Overview of the dissertation chapters: the alternate format and the organization**

This dissertation is not a traditional one. Instead, for several reasons detailed below, my dissertation is in an alternate format. Duke and Beck (1999) argued that the traditional dissertation is a strange genre: although dissertations are usually public documents, they have a very limited audience and dissemination. Therefore, to gain a solid status as a genre and to become a recognizable research report with a real impact on research and practice, dissertations need to adopt alternative formats to reach wider readership, and dissertation writing should help prepare doctoral candidates for the type of writing they will be expected to do throughout their careers. One of the possible formats Duke and Beck suggested is “a collection of articles ready to be submitted to research journals in the field” (p. 185). According to Duke and Beck (1999), alternative formats offer several benefits. First, alternative formats enable candidates to practice writing for different kinds of audiences. Second, alternative formats encourage doctoral candidates to take different angles on their
data, which is “an excellent preparation for an academic world in which scholars present and/or publish several different papers stemming from a single study” (p. 185).

As suggested by Duke and Beck (1999), the alternate format for my dissertation is a collection of research articles reporting on the studies of two second year Chinese courses that I taught at a U.S. Midwest university in the 2004-2005 academic year. In these studies, I examined the same data set from different angles, using different research methods and theoretical frameworks. I aimed to capture both a holistic view of a Chinese WebCT-enhanced language learning environment and a specific look at different tools, learning tasks, and subgroups of learners in real language-learning classrooms. I also sought to identify possible pedagogical innovations in the technology-rich language learning environment that I created for the students. Because high-level use of technology is congruent with socio-constructivism, which favors the learner-centered approach, the pedagogical innovations gained in a learner-centered learning environment may present challenges to teachers from some cultural backgrounds, including teachers in the Chinese culture, who usually value the role of being an authority in the classroom. I present the implications of my classroom innovations with careful descriptions of the classroom contexts and theoretical elaborations so that the culturally responsible use of technology and the pedagogical innovation may become more easily acceptable to other language teachers, especially those accustomed to the teacher-centered learning approach. My aim of this dissertation research is to provide a better holistic understanding of the use of a learning management system in real language classrooms and its impact on Chinese language pedagogy.

The three articles that make up this dissertation address the linguistic, sociocultural, and historical dimensions of language learning:
Chapter 2, “The Teaching of Chinese to Chinese Americans: A Critical Multicultural Approach,” addresses a specific group of Chinese language learners and suggests the importance and necessity of placing the learners at the center of the design and instructional consideration. I co-authored this article with Dr. James McShay who helped me frame the research questions and strengthen the articulation of the critical multicultural education theory. I am the primary researcher and author. As Bransford et al. (2000) stated, “we use the term ‘learner centered’ to refer to environments that pay careful attention to the knowledge, skills, attitudes, and beliefs that learners bring to the educational setting” (p. 133). Heritage learners are a unique group of learners because of their significant differences from monolingual foreign language learners, and the education of heritage language learners presents a big challenge to foreign language teachers. In the past, heritage learners were excluded from foreign language education: “Traditionally, the foreign language teaching profession in the United States has been concerned with teaching foreign or non-English languages to monolingual speakers of English” (Valdés 2005, p. 135). But, recent years have seen the education of heritage language learners emerge as an important field (Kagan, 2001). The ethnographic study of the six American-born Chinese (ABC) heritage learners presents a portrait of these learners and their learning experiences in this White-dominated university. The study also indicates the complexities of the education of heritage learners in such a context. In particular, the findings call for more attention to learners in the Midwest region of the United States where heritage language and bilingual teachers are the fewest in the country and lend support to the argument for a strong connection between multicultural education and Chinese heritage language education. The WebCT online learning environment is seen to
provide a useful venue to research heritage learners’ learning needs, process, knowledge sharing and construction, and identity negotiation and development.

After addressing the importance of a specific group of learners in chapter 2, chapter 3 explores a specific pedagogical issue. Chapter 3, “Students’ Attention to Form in Different Dimensions of Interaction in Chinese WebCT” addresses a learner-centered issue, focus on form, and its impact on the pedagogical practices in the blended Chinese language classes. This study sheds light on Chinese classroom instruction because focus on form itself challenges the traditional mindset of Chinese teachers who tend to assume an authoritative role in the classroom and depend on pre-planned syllabi and textbooks. The pedagogical implications of the study illustrate the value of learner-centered learning environments and language pedagogy with technology integration.

Last, chapter 4, “Essay Writing in a Chinese WebCT Discussion Board,” describes and evaluates a specific learning task. This chapter presents the pedagogical design and evaluation of the appropriateness and effectiveness of an essay-writing task in Chinese WebCT. It illustrates the power of a well-designed language learning task using the asynchronous CMC tool in WebCT in a class of diverse students.

In summary, the three research articles were designed to ensure that the learners, tools, and learning tasks were investigated in order to present a comprehensive and systematic look at the design, implementation, and evaluation of the use of WebCT in Chinese language classes mixed with diverse learners.

The conclusion chapter provides a summary of the major themes of the dissertation findings and with implications, as well as the limitations of the research. Recommendations for future research will also be provided. References are provided at the end of each chapter.
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CHAPTER TWO (RESEARCH ARTICLE 1)

THE TEACHING OF CHINESE TO CHINESE AMERICANS: A CRITICAL MULTICULTURAL APPROACH

De Zhang and James C. McShay

Introduction

A recent report on foreign language enrollment in U.S. public secondary schools in fall 2000 (Draper & Hicks, 2002) indicated that 98.6% of the foreign language learners study Spanish (68.7%), French, German, Italian, Japanese, Russian, and Latin. Interestingly, student enrollment percentages for courses in Asian languages such as Arabic, Chinese, Hindi, and Korean, were low to non-existent due to an absence of secondary course offerings for students. This scarcity of Chinese language classes in U.S. high schools as well as the lack of other Asian languages is of great concern, not only for non-native monolingual speakers but also for Chinese students who seek language instruction as a way of maintaining meaningful ties to their heritage. According to Tuan (1998), Asian Americans suffer from the politics of exclusion, and they are marginalized based on their race and on “an assumption of foreignness” (p. 18). Despite the long Chinese immigration history in the United States, the status of the Chinese language as a less commonly taught language in this country has revealed the marginalized and “foreign” status of Chinese in the United States. Therefore, it is worthy to investigate the legacy of exclusion and how others within our educational communities have challenged practices that have impeded the integration of Chinese language curricula into U.S. school programs.

Discussions about Chinese as a field of study within foreign/heritage language classrooms need be part of the larger discourse about foreign/heritage language education.
The United States is currently facing a shortage of competent speakers of foreign languages to meet the political, economic, and security needs both nationally and internationally. Valdés (2005) pointed out, “traditionally, the foreign language teaching profession in the U.S. has been concerned with teaching foreign or non-English languages to monolingual speakers of English” (p. 135). Because of the national attitudes toward non-English languages and long-standing traditions of monolingualism, most U.S. students are not strongly encouraged to develop high-level professional proficiencies in non-English languages (Haugen, 1972; Lambert, 1986; Tucker, 1984, 1991; Valdés, 1988, 2003, as cited in Valdes, 2005). However, due to heritage language learners’ long-term home exposure to the target language, they are often considered good candidates for reaching a high competency level (Kagan, 2005).

In recent years, recognition has grown that non-English languages are valuable resources both for individuals and for the United States society as a whole (Brecht & Ingold, 1998; Fishman, Hahirny, Hofman, & Hayden, 1966/1978; Hornberger, 1997; Ruiz, 1984; Wang & Green, 2001). Language educators widely believe that heritage languages as national resources will contribute to the well-being of the United States both internally, when it conducts its affairs as a multilingual and multiethnic society of immigrants, and internationally, where it must function in the international arena. However, Valdés (2005) remarked that American society “has traditional rejected the idea that the maintenance of either immigrant or indigenous language is intrinsically, socially, or economically valuable” (p. 137). Because of the antipathy reflected in the U.S. language policy toward heritage languages and cultures, ethnic minority and immigrant groups historically have had to develop and operate community schools outside the U.S. educational systems for their
children (Lippi-Greene, 1997; Tatalovich, 1995; Maloof et al, 2006). As early as in the
1980s, Fishman (1980) had already stated that the United States could not afford to overlook
some 6,000 community language schools attended by as many as 600,000 children, and these
schools should be included in the educational, social, and intellectual bookkeeping, more for
the sake of the national well-being than for the sake of these learners.

Chinese heritage community language schools (CLS), usually established and
operated by Chinese parents in communities across the nation, have enrolled far more
students than all U.S. high school and colleges combined, and “more CLS students are asking
that the formal educational system recognize their achievement by awarding credit or by
offering advanced classes in Chinese to enable them to continue Chinese study begun in the
CLS” (Kubler, 1999, p. 604). According to the National Council of Associations of Chinese
Language Schools, very few language schools are found in the Midwest
(http://www.ncacls.org/). However, the number of Chinese learners has growing rapidly in
the past several years. According to the 2005 report published by Asia Society, “between
1998 and 2002, the number of college students studying Chinese rose 20 percent to just over
34,0000” (p. 6). Advanced Placement (AP) Course and Examination in Chinese (Mandarin)
Language and Culture started in the 2006-2007 academic year the United States, open to both
Chinese heritage and non-heritage learners. Recent years have seen an increase of the
numbers of schools offering Chinese courses to both heritage and non-heritage learners. For
example, the solicitation for the Chinese K-16 Pipeline Project by the National Foreign
Language Initiative in 2005 will include Chinese heritage learners (NSEP, 2005). Progresses
are making in Midwest region, too. For example, in Minnesota alone, two Chinese
immersion programs started in 2006 and 2007, open to both heritage and non-heritage learners. And in Iowa, Chinese classes are becoming available in some K-6 schools.

However, Van Deusen-Scholl (2003) warned us that it is unwise to view heritage learners as merely a purely economic or strategic resource. Van Deusen-Scholl (2003) criticized that U.S. American’s values of multilingual skills “tend to be short-lived, reactive to specific threats, and generally do not lead to fundamental changes in language policy or foreign language learning” (p. 225), and she suggested that a foreign language learning framework in the U.S. national context should accept multilingualism and acknowledge the value of linguistic diversity. Van Deusen-Scholl also called for more emphasis on heritage language maintenance to preserve cultural diversity and linguistic plurality.

Providing Chinese students access to schools that offer effective heritage language instruction is the impetus for this chapter. The authors hope this work will bring more attention to places like the U.S. Midwestern region where heritage language education and bilingual education are underrepresented. In her insightful overview of implications of language education policies for language study in U.S. schools and universities, Shohamy (2003) pointed out that "we must address that LP (language policy) and LEP (language education policy) suffer from a noticeable absence of research regarding the long-range effects and consequences of policy for different groups and individuals in different contexts, including the effects on language learning" (Shohamy, 2003, p. 286). Along with Shohamy, we are deeply concerned about language and schooling practices and envision our work casting a spotlight on challenges facing heritage language programs in the Midwestern context, challenges which are often intensified by the under-representation of Chinese language learners.
With the increased trepidation over the lack of representation of Chinese language programs in U.S. high schools and the growing recognition of the importance of heritage education programs, it is critical that calls are made to broaden and deepen the body of scholarly literature detailing the ways in which heritage language programs can be both expanded and strengthened. The purpose of this chapter is to explore the ways in which Chinese heritage language programs can increase the students’ language proficiency in Chinese and simultaneously enable them to critically explore aspects of their cultural identity as a way of maintaining strong connections to their heritages. Within this work, we will frame our inquiry by first exploring the relationships between multicultural education and heritage language education. It is hoped that this cross-disciplinary exploration will lead to the creation of generative spaces that will allow for new theorizing about ways to enrich heritage language learning classrooms. This discussion will be followed by an ethnographic study, which focuses on the micro-practices of American-born Chinese (ABC) heritage learners’ learning and the pedagogical practices guided by a critical multicultural approach in order to explore heritage learners’ motivation, awareness, and negotiation of identity, heritage learners’ interactions with non-heritage learners and international heritage learners in two intermediate college-level classes, and the effects of critical multicultural pedagogy in the classrooms of diverse learners.

Finally, this chapter will present the first author’s critical reflection on her own practice and understanding of critical multicultural educational approach. It is hoped that the reflection of a language teacher as a critical researcher will shed light on heritage language teacher education.
What is critical multiculturalism?

According to Kincheloe and Steinberg (2002), critical multiculturalism addresses issues of justice and social change and their relation to the pedagogical—“the production of identity—the way we learn to see ourselves in relation to the world” (p. 27) and focuses on “how racism, sexism, and class bias are economically, semiotically, politically, educationally, and institutionally produced (p. 29). Therefore, Kincheloe and Steinberg (2002) argued that teachers play a challenging role in critical multiculturalism. They suggested that teachers become researchers of their students, investigating the ways the cultural forces shape student behaviors and identities and play them in hierarchies of domination. Teachers should be able to help students overcome social barriers by engaging the students in the exploration of different ways of reading the work, methods of resisting oppression and a vision of progressive democratic communities. The goal of a critical multicultural educational approach is to prepare students to see themselves as sites of political struggle in relation to oppressive and democratic forces and move students to a recognition of the forces that shape their identity, the various stages of reflective self-awareness, and the strategies personal empowerment demands (Kincheloe & Steinberg, 2002).

Heritage language education and multicultural education: the potential common ground

Osborn and Reagan (1998) argued for a shared agenda of foreign language education and multicultural education and stated that “foreign language education needs to be reconfigured and recognized as an essential and necessary component of the multicultural curriculum” (p. 7). Moreover, after reviewing the politics of bilingual education in the United
States, Arce (1998) suggested that critical pedagogy or a critical theory of education, which includes bilingual education, may help to challenge the unhelpful cultural hegemony, because the fundamental principles of critical pedagogy are “a commitment to changing U.S. American schools which have traditionally reflected only the values of the dominant culture” (p. 12). Moreover, in the context of identity and language, critical theory in education relies upon critical pedagogy to help students identify, critique, and challenge practices that advantage language dominant groups while marginalizing others, as well as other forms of oppression, (Nieto 2002). Therefore, it would be reasonable to argue, in any language education, whether foreign language, bilingual education, or heritage language, share the common ground with multiculturalism due to the significant way in which language helps to constitute identity. In this vein, as calls are made that foreign language and bilingual education need to connect with critical multicultural education to promote equity and social justice, we contend that heritage language education should also be reconceptualized to exemplify the principles of critical multicultural education. In the field of Chinese heritage language (CHL) education, research and practices tend to focus on language proficiency. The impact of heritage learners’ social, cultural, and historical connections on their language learning has been somewhat ignored. Many educators and researchers have indicated the importance of identity development in CHL education. However, discussions about pedagogical approaches that allow for the critical exploration of identity and its implications for CHL classrooms are not as well documented in the literature. This may be due to language educators being unfamiliar with the tenets of critical multicultural education and its relationship to learning about language, identity and culture. As a pedagogy, critical multicultural education includes providing learning experiences for students to construct
knowledge and appreciate the value of multiple perspectives, acknowledging cultural and linguistic diversity, focusing on the reduction of social prejudice, infusing multicultural content, and modifying teaching practices in ways that makes learning more accessible to students from diverse cultural backgrounds.

The following section will present an ethnographic study of the Chinese- American heritage learners in second-year, college-level Chinese language classes at a White-dominated Midwest university. In this study, we explored the students’ learning experiences in class, impact of their parents and family literacy on their Chinese learning, their motivations, and their identity awareness.

**Research context**

The study, using an ethnographic research method, was conducted in two second-year, college-level Chinese language courses, i.e. Chinese 201 and 202, taught by the first author at a predominantly White U.S. Midwestern university. These two classes were blended/hybrid with face-to-face instruction taking place in a digitally-enhanced classroom and a Chinese WebCT-supported online learning environment. These two classes consisted of primarily three groups of learners: non-heritage learners, American-Chinese heritage learners, and international heritage learners. About two thirds of the students were college students; the rest were high school students. The students brought to the classes a great diversity of ethnic and educational backgrounds, previous experiences with Chinese language and culture, proficiency levels, and knowledge of at least 8 different languages and various Chinese dialects. The international heritage learners came to the face-to-face classes only once a week, while the Chinese-American heritage learners and the non-heritage learners had face-to-face classes three times a week in Chinese 201 and four times a week in Chinese 202.
Each face-to-face class lasted 50 minutes. WebCT automatically recorded and saved all assignments submitted online and the results of all online class activities.

**The ethnographic research approach and data collection**

The first author is a mother of a young American-born Chinese (ABC) child, and the instructor of the courses that the participants were taking. More detailed information about the two classes and about all the students in the two classes is available in Chapter 3 and 4. The ethnographic research approach is appropriate in terms of meeting the first author’s personal and academic research interests. An ethnographic research approach fits well the researchers’ interests in Chinese-American heritage learners because researchers can “participate in the local culture in order to understand it from the insider’s point of view and be able to describe it from the local’s perspective” (Delgado-Gaitan, 1990, p. 35). The research setting and the first author’s role as an instructor in these two classes enabled her to carry out an ethnographic study because “getting access to information may be one of the most important and most constant issues of ethnography” (Wilken, 1995, p. 81). It is the first author’s goal to produce the multilevel understanding of Chinese-American heritage learners by combining intensive ethnographic research in classrooms and ethnographic observations of her own practice, as called for and suggested by Watson-Gegeo (1998) and Richards (1987). Hornberger (2005) suggested that ethnographic research would be valuable and should include research on the roles of technology and popular culture plays in heritage language learners’ identity development in their adolescent years.

Data were gathered during both fall and spring semesters of the 2004-2005 academic school year. The data sources include the students’ reflective journals, online chat scripts, and other assignments saved by WebCT; the researcher and instructor’s class observation
notes; and notes from conversations with parents and students. Because the first author was
the instructor of the class, and used the critical multiculturalism theory to guide her
instruction, she was aware of some linguistic and identity issues. The first author was looking
for keys words and themes related to language and identity development, although she used a
version of grounded theory to work with the data and develop meanings (Strauss & Corbin,
1990). She did open coding and focused coding. Themes emerged from the data analysis.
The process of data analysis was recursive and highly iterative, and the iterations were
repeated as often as necessary until reaching theoretical saturation—the point when nothing
new is discovered by the researcher (Eisenhardt, 1989).

Research participants

The participants in this study were six American-born Chinese (ABC) heritage
learners who enrolled in the first author’s Chinese 201 and 202 classes (See table 1). Only
one of the six participants was a college student. The remaining five ABC heritage learners
were high school students who enrolled in Chinese language courses at this university
because no Chinese language courses were offered at their high school. All five high school
heritage learners grew up in the local community. The only ABC college student, Claudia,
was from a small town in this Midwestern state, where her family was one of the few
Chinese families in the community. The research was carried out under ethical conditions in
which the high school students and their legal guardians, and the college student, signed a
consent form for this research. Pseudonyms were used to maintain the anonymity of the
research participants involved in this study.
Information included in Table 1 and Table 2 was gained from the linguistic biographies (Kagan, 2005 & Lo Bianco, 2003) the students wrote at the beginning of Chinese 201.

Table 1. Demographic information about the six ABC students who participated in the study.

<table>
<thead>
<tr>
<th>Names</th>
<th>Grade/Age/Gender</th>
<th>Parents’ origins/Home Chinese language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cindy</td>
<td>High school freshmen/14/female</td>
<td>Taiwan/Mandarin Chinese</td>
</tr>
<tr>
<td>Claudia</td>
<td>College sophomore/19/female</td>
<td>Taiwan/Mandarin Chinese</td>
</tr>
<tr>
<td>Luke</td>
<td>High school freshmen/15/male</td>
<td>China/Mandarin Chinese</td>
</tr>
<tr>
<td>Susan</td>
<td>High school freshmen/14/female</td>
<td>Taiwan/Mandarin Chinese</td>
</tr>
<tr>
<td>Winston</td>
<td>High school sophomore/16/male</td>
<td>Malaysia/none</td>
</tr>
<tr>
<td>Yates</td>
<td>High school freshmen/14/male</td>
<td>China/Mandarin Chinese</td>
</tr>
</tbody>
</table>

Table 2 shows the self-assessed proficiency levels of the five ABC heritage learners who had received little formal instruction of Chinese before taking the college-level Chinese classes. Their self-assessment of the four language skills was based on the American Council on Teaching of Foreign Languages (ACTFL) proficiency guidelines. The self-assessed knowledge of vocabulary was their ability to recognize the 3000 most frequently used Chinese characters on a Web site (http://www.zein.se/patrick/3000char.html). The first listening test was the listening part of a simulated Chinese Proficiency Test (Hàn yǔ Shuǐpíng Kāoshi, i.e. HSK) for basic learners.

Table 2: Summary of the ABC heritage learners’ self-assessed and tested Chinese language proficiency at the beginning of Chinese 201 (by September 15, 2004)
Self-assessed Test Pseudonyms

<table>
<thead>
<tr>
<th>Pseudonyms</th>
<th>Listening</th>
<th>Speaking</th>
<th>Reading</th>
<th>Writing</th>
<th>Vocab.</th>
<th>1st Listening test (out of 50 questions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cindy</td>
<td>Advanced</td>
<td>Intermediate - Medium</td>
<td>Novice</td>
<td>Novice</td>
<td>14 characters</td>
<td>25 correct</td>
</tr>
<tr>
<td>Claudia</td>
<td>Intermediate - Medium/ High</td>
<td>Intermediate - Medium</td>
<td>Novice-Low</td>
<td>Novice-Low</td>
<td>880 characters</td>
<td>41 correct</td>
</tr>
<tr>
<td>Susan</td>
<td>Intermediate - Low</td>
<td>Intermediate - Medium</td>
<td>Novice-Low</td>
<td>Novice-Low</td>
<td>44 characters</td>
<td>20 correct</td>
</tr>
<tr>
<td>Yates</td>
<td>Advance</td>
<td>Intermediate</td>
<td>Novice-Medium/High</td>
<td>Novice-Medium/High</td>
<td>70 characters</td>
<td>28 correct</td>
</tr>
</tbody>
</table>

Notes: (1) The information was students’ self-reported self-assessment of their Chinese proficiency skills, except their first listening test scores. (2) Students referred to the ACTFL proficiency guidelines for their self-assessment.

The researchers used two definitions of heritage learners in the sampling of the research participants. Five of the participants were heritage learners who are second-generation, Chinese-Americans, grew up in Chinese-language speaking families, and whose parents are first-generation immigrants from China or Taiwan. They fit into the definition of a heritage learner provided by Valdés (2001): “a heritage learner refers to a language student who is raised in a home where a non-English language is spoken, who speaks or at least understands the language, and who is to some degree bilingual in that language and in English” (p. 38).

Winston, the sixth participant, was not a typical heritage learner as far as his Chinese proficiency was concerned. However, he does have a remote Chinese heritage and a personal
connection to Chinese. Winston’s grandparents emigrated from China to Malaysia and his parents emigrated from Malaysia to the United States. His parents had already lost Chinese as a heritage language, so Winston did not get exposure to Chinese language at home as other ABC students did. Because the focus of this study was not on linguistic proficiency, he was added as a participant in this study to enhance the understanding of the social and cultural dimensions of the ABC heritage learners. The inclusion of Winston in this study is supported by Fishman’s (2001) definition of a heritage learner; that is, it is the historical and personal connection to the language that is salient and not the actual proficiency of individual speakers.

These two classes were the first formal Chinese language instruction for the four high school freshmen and Claudia, the ABC college student. Winston took the basic Chinese courses (Chinese 101 and Chinese 102) with another instructor at this university in the previous year.

**Findings and discussions**

Wallace (2004) remarked that “ethnic and racial identities are not merely imposed on the person externally but are collectively worked out both by the individual and the social group across variable contexts” (p. 198). The heritage learners’ home and school cultures they were living in emerged as important factors shaping and influencing their heritage learning. These learners were encouraged and guided to do critical self-reflection which provided insights into the understanding of their awareness of the Chinese heritage and identity. The findings of the ethnographic study, presented in details below, reveal the factors influencing CHL learners’ decisions to pursue Chinese heritage-learner education, forms of critical pedagogy can be used to strengthen the educational experiences of Chinese-American
heritage learners, and the ways that technology can support the goals of critical multicultural education in heritage-language education courses.

**Discovering heritage learners’ linguistic biographies**

Critical multicultural teachers must understand where they are located in reality. In this research, the authors of this article believe that they must understand the students’ reality related to learning Chinese. The first author gave students the opportunity to write linguistic biographies, as suggested by Kagan (2005) and Lo Bianco (2003), who held the view that heritage learners’ linguistic biographies could be one of the most informative tools available for understanding linguistic profiles and determining students’ heritage-language proficiency levels. From the perspective of critical multicultural educational, the learners wrote the linguistic biographies to know themselves better and more fully understand their connection to the language.

The linguistic biographies of the participants in the study revealed that the four ABC high school heritage learners’ proficiency was rather low (see Table 2). Unlike heritage learners on the U.S. west and east coasts who attend heritage community language schools and even receive foreign language credits, there is no well-established Chinese heritage community language school in this local area. The heritage learners had disjointed Chinese language education before enrolling in the college Chinese language classes. Almost all the four high school freshmen heritage learners mentioned their previous learning experience in a local informal Chinese language weekend school. But this informal learning yielded neither a positive impression nor sustained knowledge. Their accounts of their previous learning experiences suggest some reasons for their low achievement. Winston said, “I used to go to Chinese school when I was in elementary school, but I’ve forgotten most of that except for
one or two phrases” (Journal 1, Chinese 201, submitted on September 15, 2004). Susan’s Chinese language learning experience appears to reflect of the majority of Chinese heritage learners’ experiences, and she vividly described her Chinese language school experiences in her first reflective journal in Chinese 201:

Before this year, my Chinese language education was not very good. I started to go to Chinese language school when I was 3 and a half years old. Every year I had a new teacher. They had taught me different things. Some taught me the sound system used in Taiwan. Some taught me Pinyin (the sound system used in mainland China). Some taught me to read Chinese characters, some taught me songs. There was no systematic knowledge. I had made rather slow progress. (translated from Susan’s journal 1, submitted on September 15, 2004)

While the high school heritage learners’ experiences in the so-called language schools were not productive, the college ABC heritage learner, Claudia, did not have Chinese schools to go to at all because she grew up in a small, predominately Caucasian Midwestern town where her family ran a Chinese restaurant. However, Claudia had the highest language proficiency among the six participants, and she had relatively balanced listening, speaking, reading, and writing skills. Her Chinese language literacy was achieved at home. The sharp language proficiency gaps and different family backgrounds among the ABC heritage learners who grew up from Chinese language speaking families drew the first author’s attention to the parents’ involvement in these heritage language learners’ education in the Chinese language.

**Home culture**

According to Tse (2005), home is the third and final source of support for heritage learners in addition to institution and community. In this study, the six heritage learners’ home support and culture varied.
Claudia’s parents received little education before coming to the U.S. and spoke limited English. Claudia and her brothers, who often helped her parents in the restaurant during weekends and holidays, worked as “language brokers” (i.e. interpreters and translators) (McQuillan & Tse, 1995) for her parents who ran a Chinese restaurant in a small, rural town in this Midwest region. Claudia indicated that she picked up some Chinese characters from her elder brother’s cartoon books and the Chinese soap operas (some of which had Chinese subtitles) her mother watched, which may explain her relatively high literacy of recognizing 880 Chinese characters even though she never received any formal instruction in Chinese before taking the college level Chinese classes. The Chinese cartoon books and the Chinese soap operas were literacy materials at home.

On the other hand, the high school heritage learners’ parents did not seem to be effective in creating a Chinese-language learning environment at home, although the parents were supportive of Chinese language learning in many ways. For example, Susan reported that her father, a professor and a Jewish American, who did not speak Chinese, recently bought online the Chinese version of the recent new book of *Harry Potter* for her. She hoped that she could eventually read the book all in Chinese. Her father also encouraged her mother who was Taiwanese to speak more Mandarin with the children at home. The other three high school freshmen kids hardly mentioned whether they had any Chinese books or movies at home. Yates said that during the winter break, his parents borrowed some Chinese movies and soap operas but he never watched them. His parents usually were busy and did not watch Chinese movies or television as much as they wished. Winston’s parents were Chinese Malaysian immigrants and did not speak Chinese. But, his mother drove Winston and his
elder sister nearly every day from their high school to the university for their Chinese
language classes over the past two or three years.

The first author also found that these Chinese high school heritage learners usually
did not speak Chinese at home. Their parents often had to compromise because their child
either ignored their questions or orders in Chinese at home or their child only talked to them in English. Their children were too busy with assignments on other subjects to do work in Chinese, which was considered an extra burden of learning by these high school students. These parents, who all received advanced education in the United States and had high expectations about their child’s academic excellence, did not push the children to learn Chinese. A very important reason for not pushing Chinese language learning was implied in the high school heritage learners’ and their parents’ conversations with the first author: English is the most important language for further education and employment in the United States, a finding consistent with the literature (e.g. To, 2000; Beynon et al, 2003). This monolingual and monocultural U.S. context added emphasis on the importance of English to these heritage learners. Therefore, it is not difficult to understand that the factors influencing these high school heritage learners’ decision to take college courses were associated with the academic achievement in high school and their future education, which we will discuss later.

Again, in contrast to the high school heritage learners’ relatively Chinese-free home environment, Claudia’s family had created an effective Chinese-learning atmosphere. Her parents were not well-educated in Taiwan, did not speak much English, and were busy running their Chinese restaurant. However, they managed to encourage and help Claudia and her brothers learn to cherish their Chinese heritage, as described in Claudia’s final Chinese essay in Chinese 202:
Now I always chat with my parents in Chinese…I have been lucky that my parents have educated me and my brothers to be capable of listening, speaking, reading, and writing in Chinese in the United States. Thus, we are not only able to communicate with Chinese, but also we have mastered one more language. My parents always say it never hurts to learn more. I believe what they have said is correct. (Journal submitted on May 4, 2005)

Therefore, we would like to suggest that parents should create a good Chinese language-learning atmosphere at home by speaking Chinese, watching Chinese movies and TV programs, and participating in other Chinese literacy activities. As Compton stated, “it is often the parents and the elders who have the knowledge and capacity to share through storytelling, drama, and song significant aspects of the literature and cultural traditions of a people” (Compton, 2001, p. 160).

Students’ lack of enthusiasm for Chinese at home and the parents’ compromises in speaking English definitely need further investigation. But here the authors of this article would like to see whether students’ motivation to learn Chinese and their school culture may provide insights into our understanding of the home practices.

**Students’ motivation and school culture**

Schools play an important role in the socio-cognitive growth of students and can foster positive ethnic identity development (Sheets & Hollins, 1999). The availability of heritage language programs will help with heritage learners’ identity development (Feuerverger, 1991).

Valdés (2005) pointed out that “at the secondary level, foreign language study is seen as a college-preparatory experience of interest primarily to mainstream, middle-class, English-speaking monolinguals” (p. 135). The fact that China is growing politically and economically in the world definitely has had an impact on schools’ and parents’ support of
Chinese language classes. Although the local high school does not offer Chinese courses, the school did support these heritage learners in taking Chinese courses at the university by paying the tuition and textbook costs. The local high school’s principal indicated in an interview in the university newspaper that the high school would offer Chinese if there were licensed Chinese language teachers available.

These four Chinese heritage learners’ enrollment in the college Chinese class resulted from the collaborative efforts of the high school, university, parents, and the instructor. The economic and political growth in China is significant because external social and political power (Sue, 1980) is one of the two main factors affecting one’s ethnic identity (Yao, 1983). Two of the four high school students had elder siblings who took French and Spanish in high school. Taking college-level Chinese language courses seemed a good choice because the high school students would meet the high school foreign language curriculum requirement or recommendation by taking Chinese courses, and the college credits would be a big advantage when the high school students apply for admission to colleges. Furthermore, the Chinese language students would receive formal instruction in Chinese so that they could maintain loyalty to the Chinese culture as their parents had dreamed of or expected. For example, Susan, the 13-year-old high school freshman, wrote in her journal about her motivation for learning Chinese:

I took this course mostly to please my mother, but also because learning a foreign language is recommended by my school. Taking Chinese seemed to be the logical choice, because as a heritage learner, I already had a good background in Chinese. I believe Chinese will help me build a better relationship with my mother's mother and other relatives on my mother's side, who cannot speak English well and therefore I never could relate to properly. Learning Chinese could also help me when I apply for a college in the future. (Susan’s journal 3, submitted on December 5, 2004)
Similarly Luke, a high school freshman, gave the instructor the impression that he was forced to take Chinese by his parents as he wrote honestly in his journal:

I took this class mostly because of my parents, who suggested it. ....If I take one year of Chinese every year I am in high school, I would graduate with twenty four credit hours. (Luke’s journal 3, submitted on December 5, 2004)

As for the college student, Claudia, although she did not take the Chinese courses to meet any curriculum requirement, she did mention that she hoped that she could apply for jobs in Chinese-speaking countries after her graduation from college. But, she had a stronger integrative motivation than the high school heritage learners. As she stated, her current motivation to learn Chinese was for fun and to enjoy the language itself:

I want to be able to read newspapers like my mom and dad can. I want to be able to read the captions on the TV bottom when I watch a Chinese show or movie. Hopefully, I get to enjoy comic books like my friends and elder brother does. (Claudia’s journal 3, submitted on December 5, 2004)

This finding of mixed motivation is consistent with Li’s (2005) findings. Li (2005) indicated that as China is on a rapid economic rise, more Chinese heritage language students believe that it is practical and beneficial to learn their heritage language to advance their future careers. Li (2005) also suggested that as most heritage language studies found, integrative/cultural orientation is a critical motivation for university students to learn Chinese heritage language, and the desire to understand and reclaim one’s ethnic identity leads the heritage learners to learn Chinese heritage language. Ethnic identity plays an important role in heritage learners’ learning of their language.

Clearly, awareness of culture heritage is important. Critical multicultural teachers should place the students’ identity development the center of their attention. As Shohamy (2003) noted, languages are central to the language speakers’ individual and social identities.
The authors want to seek ways to strengthen heritage learners’ educational experiences for their identity development and to prepare them to become reflective and productive decision makers who can participate effectively in U.S. society and beyond.

**Community culture**

Although this university had a relatively large Chinese community, with an average of about 700 students from Mainland China alone, plus students from Hong Kong and Taiwan, these American-born Chinese heritage learners had rarely before participated in any Chinese community activities, such as celebration parties of Chinese New Year or Mid-Autumn Festival, on the university campus.

While there is an established group of Chinese in this small city where the university is located, there was not a well-established Chinese community language school for all Chinese children, but there were small Chinese classes run by Taiwanese, Chinese, and Malaysian Chinese for their children.

It is hard to determine the reasons why there was no united Chinese community language school for all the Chinese children. But Chinese parents from different origins might need more communication and collaboration on their children’s education of the Chinese heritage language.

**Students’ exploration of their identities**

1. **Students’ critical self-reflection**

As the goal of critical multicultural educational approach is to move students to a recognition of the forces that shape their identity, the various stages of reflective self-awareness and the strategies their personal empowerment demands (Kincheloe & Steinberg, 2002). In these two Chinese language classes, students were provided opportunities for
critical self-reflection on their language learning, identity, and heritage in their discussions and reflections online.

Peyton, Ranard, and McGinnis (2001) remarked that “sometimes it is when students reach college and university that they first feel a need to renew connections to the language and culture of home” (2001, p. 20-21). In this study, the young high-school-freshmen heritage learners already had started to seek their dual identity even they were only 13-15 years old. Therefore, we believe the earlier the heritage learners start formal instruction of the heritage language, the better they will develop both linguistically and in identity. What was most striking was the ABC heritage learners’ awareness of their heritage and the keen interest in keeping and maintaining their roots, which was revealed in their multiple motivations to learn Chinese. For example, Winston’s awareness of his remote Chinese heritage and his pride in his origin was surprisingly clear when he wrote the following in his journal near the end of Chinese 201:

Out of all the languages available to me, Chinese was the most appealing. Learning Chinese has been a very piquant experience for me. I like how China has such a long and extensive history and also its new role as an emerging world leader. Also I have a Chinese heritage that, while I’ll also be an American, I like to learn more of Chinese…But mainly, my interest in Chinese came from its history, culture, and role in my ancestry/heritage.

(Winston’s journal 3, submitted December 5, 2004)

Winston was one of the most motivated and hardworking students in the classes. Even though his parents did not speak Chinese and were not able to offer him any direct help, he made very good progress. His multiple motivations for learning Chinese and the pride of having a Chinese heritage appeared to contribute significantly to his success in the classes.
Cindy, the 14-year-old high school freshman, clearly indicated that she did not take Chinese to meet her high school foreign language curriculum requirement, because she had been taking Spanish for that purpose. She wanted to learn Chinese for her own personal reasons:

I was always so intrigued by the language and culture that is so much a part of me and yet so far from me. Growing up in America, I became accustomed to American ways and the English language. Especially at times when my family and I go back to Taiwan, I find myself caught between worlds, neither of which truly seem to exist for me. At home, I learned to eat with chopsticks, understand the Chinese language, and the academic and social expectations of an Asian child because of my parents. My heritage was always very important to me and it was something that I didn’t want to lose as I grew older and older in a whole different society. I wanted to be able to go back to Taiwan to visit my relatives and to be able to read signs on shops, newspapers, and streets/maps. I also wanted to be able to communicate freely with them, for although I can understand Chinese fairly well, I still have some trouble finding the right words and pronouncing them correctly. I will always want to keep my roots and remember who I am. (Cindy’s journal 3, submitted December 4, 2004)

Cindy’s confusion about her identity and her eagerness to know about her Chinese origins and maintain her roots are strong. American-born Chinese heritage learners like the participants in this study, who grew up in a mostly White community and have received monolingual mainstream education, may have questions about “who I am.”

Critical scholars tend to look at cultural identity formation in historical and socioeconomic contexts, as well as in terms of power relations. The heritage learners’ awareness of heritage suggests that heritage language curriculum should focus on how they can become what they can be and how they can represent themselves. Stuart Hall (1996) stated the following about students’ identity:

Identities are about questions of using the resources of history, language, and culture in the process of becoming rather than being: not ‘who we are’ or ‘where we came from,’ so much as what we might become, how we
have been represented and how that bears on how we might represent ourselves. (p. 4)

Further, heritage-language education may bring some benefit that regular second/foreign language education may not be able to bring: developing the language learners’ self-esteem. Wright and Taylor’s (1995) study provided some initial insights into the experiences of ethnolinguistic minority and majority students in terms of personal and collective self-esteem, and the study provided support for claims that heritage language education can have a positive impact on the personal and collective self-esteem of minority language students. In this study, the 13-year-old Susan indicated that “this class has helped my confidence and self-esteem, not only in Chinese, but in general also” (Susan’s journal 3, submitted December 5, 2004).

The awareness of the heritage identity should remain an important issue, if not the most important issue, in heritage language education and in multicultural education in the United States in general. As Grant (1994) clearly stated in his definition of multicultural education, learning is important to personal growth: “[multicultural education] helps students to develop positive self-concepts and to discover who they are, particularly in terms of their multiple group membership” (p. 4)

2. Multiple perspectives

In this study, technology played an important role in supporting the goal of critical multicultural education in Chinese heritage-language learning. First of all, the text-based, computer-mediated communication helped the heritage learners develop their literacy proficiency. More importantly, the Chinese WebCT online environment provided students
rich interaction opportunities to explore issues that they are interested in and themselves from multiple perspectives.

Online learning, especially with a diverse group of students, is ideal for the presentation and experience of multiple perspectives. Online education has easy access to international and culturally diverse resources, including diverse populations. Further, the computer-mediated communication tools in online learning environments open channels for students to communicate with their peers from different cultural backgrounds and with people from all over the world. More and more language educators and researchers have realized the connection between computer-assisted language writing activities and learners’ identity development. For example, Lam (2000) suggested, “one attraction of CMC (computer-mediated communication) is the variety of options it offers participants for designing their identities” (p. 463).

Technology’s roles in supporting the goals of critical multicultural education in heritage language learning were explored in this study. Because of its written mode of communication, the WebCT online learning environment was ideal in helping students’ to develop writing skills, which was an area of primary focus in their Chinese language classes. Students were encouraged to share their real life experiences in the writing tasks such as reflective journals and essay writing tasks in the WebCT discussion boards. “Connect writing to students’ lives” is one of Nieto’s (2002) four guidelines for approaching the teaching of writing with a multicultural perspective: “what could be more appropriate than connecting writing to students’ lives?”(p. 166).

The more personal experiences the students shared with each other, the more trust and support the students provided to and gained from each other. In this study, the students’ trust,
support, and satisfaction with each other was revealed both in the reviews and comments on the essays but also in the essays they wrote. Students’ essays on self-chosen topics and assigned topics revealed the students’ identities and their knowledge and interest in Chinese culture. The American-born Chinese heritage learners, both those in college or in high school, tended to explore their knowledge about China and Chinese culture in their essays on topics such as “celebrating Chinese New Year in the United States,” “My experiences in learning Chinese,” and “Chinese Yuan and the U.S. Dollar.” These topics were contributing to the heritage learners’ understanding of whom they are and whom they might become.

In addition to the reflective journaling and essay-writing tasks in the asynchronous discussion boards, students also did online chats in WebCT. As in the essays, the heritage learners liked to share their experiences and knowledge about Chinese culture. Following are excerpts of the chat scripts from the high school heritage learners who were browsing online for information and chatting about Chinese New Year celebration custom and practices. This chat aimed to prepare them for the Chinese New Year celebration party and the essay they would write in the following week: “Celebrating Chinese New Year in the United States.” This online chat on Chinese New Year revealed the richest information about their experiences with Chinese New Year and the perceptions of these Chinese customs. They did the following chats in English.

Winston: Death and dying are never mentioned…. Cultural proof that a 4.0 is bad.
Susan: and hong bao (note: red packets), you are not supposed to give 4 dollars.
Luke: Why is 4 bad?
Cindy: Its only four dollars? Cheap.
Susan: because 4 (si4) sounds like dying (si3).
Cindy: Do all of you celebrate new year?
Susan: Yup, all of us.
Winston: lots of good food and money
Yates: In China, the government banned fireworks, but there were still people
Cindy: well we send cards back to Taiwan
Luke: the red packet money is supposed to be given in “multiples”.
Cindy: how much money do you get?
Yates: I got maybe 200-400 Chinese Yuan from each person last year. It added up to a lot.
Cindy: (Each person) as in random people on the street?
Yates: family.
Cindy: that’s cool. I remember when we went back, they tried to give me one of those things and my mom made me give it back.
Susan: The most I got at one time from one person was 60$.
Winston: Woah
Cindy: what a trauma
Winston: that’s more than I get all year.
Cindy: I never get money… BAH!
Yates: 8.28 yuan=1 dollar.
Winston: You have nice clothes at least.

(WebCT chat scripts on February 3, 2005)

Following this part of the chat, the high school heritage learners continued searching on the Internet for the Chinese customs of celebrating the Chinese New Year, like not to wash your hair on the New Year’s Day because you would wash away your good luck for the New Year and noodles should be uncut, as they represent long life. They made the following comments in the chats, “How can a communist country be so superstitious?” “People wear read because they’re commies,” and “There are so many superstitions.” In the later part of the chat, they also inquired about each other’s family traditions of Chinese New Year, religious observations, etc. Although the students used all English in this in-class chat, the information revealed their experiences and their perceptions of the traditional customs and practices of celebrating Chinese New Year. These traditional customs and practices have existed for more than 1000 years and were not initiated by the Chinese communist party, which established the People’s Republic of China in 1949. The students’ comments indicated the negative attitude toward communist China and misconceptions about China and Chinese culture. The
origin and development of negative attitude and its relationship with their identity
development deserves further investigation.

What merits mention is that the first author held the pedagogical belief that it is
equally important for the learners to make their voices heard, for Chinese knowledge and
experiences to be shared, as it is to improve Chinese language proficiency. In these classes,
students were given permission to use English or Chinese, although the use of Chinese was
highly encouraged and emphasized. The heritage language learners’ use of mixed codes,
English and Chinese, revealed that their Chinese language proficiency is not enough to
convey their feelings and experiences with Chinese culture. Like the Korean American
heritage learners described in Jo’s (2001) study, these high school Chinese heritage learners
explained their opinions on their identity, homeland, and Chinese culture not in Chinese, but
mostly in English. With the flexible language requirements for the text-based communication
in the online learning environment, these heritage learners developed and articulated their
identity consciousness in their reflective journals, online chats, and discussions written in
English. As Jo (2001) warned, heritage learners’ “mixed language expressions are never easy
combination s of both languages, but processes of struggles seeking proper channels for their
voices” (p. 31). As shown above, the online chats gave students opportunities to share their
Chinese cultural knowledge and construct a learning community for themselves, but also to
have their voices heard. These chats were not only a learning process but also process of
socialization.

In the two classes which this study was conducted the synchronous online chats, the
reflective journals, the essay-writing tasks, and class discussions conducted in the WebCT
asynchronous discussion board provided opportunities for the learners to learn about each
other’s identities, experiences, and thoughts. The online learning community played an important role in the heritage learners’ learning of Chinese and identity development. As the sociocultural dimensions of language learning are receiving increasing attention, online learning definitely has a lot to contribute to the heritage language education, because unlike traditional foreign language learners, heritage language learners usually have strong historical, social, and cultural connections to the target language.

In addition to their identity development, computer-mediated communication in the Chinese WebCT also developed American-born Chinese heritage learners’ literacy level. The following table provides evidence of the heritage learners’ progress in reading and writing when they were compared with non-heritage learners who had formal instruction of Chinese and had a higher literacy level at the time of starting Chinese 201. Because Winston took Chinese 101 and 102 in 2003-04 before taking Chinese 201, his data were included in the non-heritage learners’.

Table 3: Students’ reading test results and lengths of their essays in Chinese 202

<table>
<thead>
<tr>
<th></th>
<th>Online reading test on April 22, 2005 in Chinese 202 (41 questions)</th>
<th>Average of the total characters in essays written in February and March, 2005</th>
<th>Average length of each essay written in February and March, 2005</th>
<th>Average length of the final essay submitted to a Chinese magazine by May 10, 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC heritage learners (N=5)</td>
<td>64.39%</td>
<td>736 characters</td>
<td>190 characters</td>
<td>449 characters</td>
</tr>
<tr>
<td>Non-heritage learners (N=5)</td>
<td>57.56%</td>
<td>761 characters</td>
<td>229 characters</td>
<td>558 characters</td>
</tr>
</tbody>
</table>

What the authors want to emphasize is that online technology can promote heritage learners’ literacy and identity development. Further, the Chinese language literacy and online
learning skills developed in the online setting will help them in their near future in globalized virtual communication and global competition, as Kincheloe and Steinberg (2002) noted:

Globalization creates a social context where Western culture can no long simply be positioned as the paragon of civilization. Non-Western cultures and other marginalized groups have revolted against this exclusionary practice, demanding that their voices and histories be acknowledged. (p. 89)

These Chinese heritage learners developed the literacy and reflective skills needed to speak out about their concerns and interests. When they participate in globalized communication, the voices of the heritage learners of non-Western languages like Chinese will reflect and cause change in globalization.

Teachers as critical researchers

Liang (2006) commented, “Typically, research on identity and research on language functions have been pursued as separate enterprises. Little has been said about both together” (p.159). This study suggests that identity and language function are inseparable; therefore, research on both is necessary. The reasons for the scarcity of research on both identity and language function are hard to determine. But this study, guided by the critical multicultural approach, indicated that the teacher’s awareness and training in multicultural education is crucial. As many heritage-language teachers are minority-group members and immigrants themselves, heritage-language teachers should be guided to value their own rich cultural experiences and present a positive identity. Beynon et al. (2003) warned about the importance of positive, if complex, cultural identity:

When employers’ authoritative discourses focus on language as a marketable commodity and avoid inquiries into the diversity of teachers’ racial, linguistic,
and cultural experiences and identities, these discourses implicitly negate the value of these multifaceted identities (Hall, 1996). Avoiding this complexity of identities and experiences becomes a way of silently asserting the power structure of mainstream education. This silencing is a negation of the reality that racial minority professionals have long participated on unequal terms in the racialized environment of the school (Dei, 1996).” (Beynon et al., 2003, p. 23)

To help heritage-language learners with their critical language awareness and consciousness of their multiple voices, heritage-language teachers should be role models to the students in terms of constructing positive identities and resisting oppression and marginalization in the field of language education.

**Conclusion**

The authors of this article first argued for a connection between multicultural education and Chinese heritage language education. Then to back up this argument, the authors presented an ethnographic study on six Chinese-American heritage learners’ experiences in two intermediate Chinese language classes at a predominantly Caucasian university in Midwest region. The research findings and the teacher and researcher’s reflections on the adoption of the critical multicultural education approach in the Chinese language classroom pointed to the importance and necessity of critical multicultural education.

Minority ethnic children’s development of their identity appears to be positively influenced by the majority group’s efforts to incorporate them. In recent years, interest in learning Chinese in mainstream society in the United States has significantly increased. However, as revealed in this article, the imbalance of the availability of CHL education across the United States calls for efforts to address the needs of CHL learners in underrepresented Midwest regions. An online learning community appears to be effective in
providing CHL learners opportunities to explore their knowledge about Chinese culture and their identities. The socialization and identity development of heritage language learners in the online community deserves further exploration. At the same time, it is important that CHL teachers understand that their professional practice engages themselves, the students, and the knowledge derived from the disciplines with the Chinese Americans’ real struggle to live just and equal lives in both private and public domains in the United States. CHL teachers, along with foreign and bilingual teachers, should and can help develop a stable and equal multilingual and multicultural society. The authors of this chapter want to suggest language teacher education programs require their graduates to develop an understanding of both critical multicultural education and critical applied linguistics theory, in addition to increasing target group language proficiency and knowledge of teaching methodology.

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CHAPTER THREE  (RESEARCH ARTICLE 2)

STUDENTS’ ATTENTION TO FORM IN DIFFERENT DIMENSIONS OF INTERACTION IN CHINESE WEBCT

Introduction

This article describes pedagogical innovations to inform Chinese language pedagogy, especially instructional practices in technology-integrated Chinese language classrooms. Little in-depth work has been done on language pedagogy for Chinese at either the theoretical or the practical level (Chi, 1996) except for several recent exceptions, e.g. Duff and Li, 2004; Jin, 2005; and Shen and Ke, 2007, which will be introduced in the literature review section of this article. However, none of these recent studies dealt with the interaction between technology and instructional practices. With the increasing use of technologies in Chinese language classrooms, it is worth exploring the influences that technology may have on Chinese language teachers’ perceptions of their roles, their pedagogical beliefs, and their choices of instructional materials and the innovative pedagogy that technology integration may yield. It is hoped that this study will add much needed literature on Chinese language pedagogy and provide some insights into students’ incidental attention to form in different dimensions of interaction in technology-integrated Chinese language classrooms.

The definition of the term "form" used in this article, suggested by Ellis (2001), includes phonological, lexical, grammatical, and pragmalinguistic aspects of language. Student’ attention to form has been widely researched in language learning. Focus on form, according to Long (1991), enables learners to “notice” linguistic elements (for example, grammar, vocabulary, pronunciation, and discourse features); therefore, focus on form
promotes language acquisition. Ellis (2001) differentiated planned and incidental focus on form. In planned focus on form, the teacher/researcher pre-determines a form for attention. In incidental focus on form, the teacher/researcher does not pre-select any form or forms to be attended to; rather, the focus on form arises naturally during the communicative task with no pre-targeted language forms. This article will describe students’ incidental attention to form in learner-learner interaction in synchronous computer-mediated communication (CMC) activities and the interaction between learner-technology resources.

The article begins with relevant literature on focus on form (FonF) and focus on forms, FonF in Chinese language, and FonF for heritage learners. The research methods and results of the study are followed by a conclusion that summarizes the findings and gives recommendations for classroom practice and research.

What is focus on form?

According to Long (1991), “focus on form…overtly draws students’ attention to linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning or communication” (p. 45-46). Long (1991) also suggested that FonF occurs in learners’ interaction when communication problems or communication breakdown occur, which leads to attempts to negotiate for meaning. Theoretically, FonF tends to be student-centered. For instance, Swain (1998) pointed out that although teachers design tasks to encourage students to pay attention to accuracy and form-function, the students usually establish their own goals and agenda as to what they focus on. A similar statement was made by Williams and Evans (1998) based on their research findings, that "each individual student has a point of readiness for focus on form" (p. 155), and Pienemann (2005) that, at a certain learning stage, “learners
can produce and comprehend only those L2 linguistic forms which the current state of the language processor can manage” (p. 686)

The increasing research literature on FonF underscores its importance in language teaching and learning. A body of classroom-based research has consistently indicated that learners not only benefit from, but may sometimes require FonF in order to overcome incorrect or incomplete knowledge of specific target language features (e.g. Lightbown & Pieneman, 1993; Lightbown, 1998; Lyster, 1994; Swain, 1991; White, Spada, Lightbown & Ranta, 1991). Recent years have seen growing research literature on FonF in computer-mediated communication, which indicates that CMC promotes FonF because text-based CMC offers learners opportunities to notice lexical and grammatical features in the input, and, therefore, can amplify learners’ attention to linguistic form (Warschauer & Kern, 2000). In addition, written communication may offer more opportunity for attention to form than spoken language (Chapelle, 2001). Research findings on learners of many European languages suggest strong evidence of CMC-supported FonF (e.g. some recent studies: O’Rourke, 2005; Smith, 2004; Sotillo, 2005). But evidence of CMC-supported FonF from non-European languages is rarely found.

The distinction of focus on form and focus on forms offers researchers and teachers direction for practical implementation of the two pedagogical approaches in the teaching of language. According to Long (1997), when focusing on forms, language learners spend most of their time working on isolated linguistic structures in a sequence predetermined externally by a syllabus designer or a textbook writer. In contrast, FonF draws students’ attention to linguistic elements (words, collocations, grammatical structures, pragmatic patterns, and so on) in context as they arise incidentally in lessons whose overriding focus is on meaning or
communication. According to Ellis (2001), in a FonF approach, learners are users of the language and language is viewed as a tool of communication, while in a focus on forms approach, learners view themselves as learners of the language and the language as the subject of study.

Long (1997) pointed out at least six major problems of focus on forms. For example, focus on forms is a one-size-fits-all approach that does not allow for individual learners’ particular communicative needs, learning styles, and preferences. Focus on forms also leaves language learners out of the syllabus and ignores the major role they play in language development. Research has indicated that learners’ acquisition sequences do not reflect planned instructional sequences (e.g. R. Ellis, 1989; Lightbown, 1983, as in Long, 1997). Other researchers, for example, Pienemann (1984 and elsewhere) and Mackey (1995) have suggested that teachability is constrained by learnability: “The idea that what you teach is what they learn, and when you teach it is when they learn it, is not just simplistic, it is wrong” (Long, 1997).

The lack of studies on Chinese FonF may be a result of the tendency of Chinese language teachers to favor “focus on forms” over “focus on form” because the former is more teacher-centered, which is compatible with Chinese teachers’ general mindset of being an authority in the classroom and with their dependence on textbooks. Chi (1996) pointed out that the guiding forces for the teaching of Mandarin Chinese are largely the content and structure of the textbooks being used and the instincts and experience of the instructors. Chinese teachers usually develop a passive mentality and a mechanical approach, yielding to and restrained by the philosophy and structure of the available textbooks (Chu, 1996). But two recent articles pointed out the necessity of form-focused instruction and called for more
research on teaching Chinese as a foreign language. In an exploratory study of instructional issues encountered in the teaching of Mandarin Chinese as a foreign language at the university level, Duff and Li (2004) found that teachers, researchers, students, and institutions sometimes held conflicting views about instructional methods and types of classroom interaction, especially in the context of form-focused instruction. They concluded that “further classroom-based research on non-European target language is sorely needed, since the cultures, contexts, and particularities of those languages offer important and possibly unique insights into larger theoretical issues that have been dominated to date by research on Western European languages” (p. 456). Drawing on studies on form-focused instruction and classroom second language acquisition, Jin (2005) introduced form-focused instruction strategies and implementation procedures for Chinese-as-a-foreign-language learners. She ended her article with an expectation of more research and teaching efforts on form-focused instruction. No other literature has been found on FonF or form-focused instruction in Chinese language teaching and learning.

While criticizing teacher-dominated language classrooms and teachers’ dependence on textbooks is not the purpose of this study, this article aims to answer the call for more research on Non-European languages, such as Chinese, and to illustrate the necessity and importance of investigating the learner-centered FonF and its impact on classroom instruction in technology-integrated Chinese language classrooms.

Since Chinese is the language in question, it is necessary to provide a brief introduction, which comes in the following section, to the sound and writing systems of the Chinese language to bridge the knowledge gap between Chinese and other European languages.
Chinese Pinyin and characters

The most immediate differences between Chinese and the European languages are that Chinese is written in ideograms rather than alphabetic characters and that Chinese lacks the properties of most European grammatical systems. For example, Chinese has no articles, no tenses, no participles or gerunds, no moods, and virtually no inflections (Wang, 2001). Chinese characters, unlike English letters, are not sources of phonetic information. While English and other alphabetic languages contain a one-to-one sound-symbol correspondence allowing for a word to be “sounded out,” Chinese does not. The meaning content of a Chinese character, called a radical, provides information about the general category of meaning to which the morpheme belongs. Shen and Ke (2007) investigated the developmental trends in acquiring knowledge of radicals, radical perceptions, and the application skills of radical knowledge in Chinese character recognition, and their research findings pointed to a moderate positive association between the development of radical knowledge application skills and Chinese character acquisition. Shen and Ke (2007) stated that “further studies are needed to examine the role of instruction and its impact on developmental patterns of radical awareness” (p. 109).

Chinese language learners usually have to deal with two separate systems of the Chinese language: the sound system and the Chinese character writing system. Fortunately, the Pinyin Input Method used with a regular computer keyboard makes the connection between the writing and sound system of the Chinese language (Xu & Jen, 2005). Pinyin is the sound system of the Chinese language, and Pinyin symbols are Romanized letters. The Pinyin Input Method involves inputting the Pinyin symbols of the characters on a regular computer keyboard, after which the user selects a character from a menu. Mu and Zhang
(2004) recognized that the Pinyin Input Method can lead to at least three learning outcomes—character recognition, knowledge of Pinyin symbols, and the pronunciation of Chinese characters—because the reproduction of Chinese [on a computer] requires students to have precise character recognition. For the precise character to appear, students are required to have accurate knowledge of the Pinyin symbols for the character, and accurate presentation of Pinyin symbols requires students to know correct pronunciation of the Chinese character. And further, in the process of locating the desired character, students get a chance to review characters they have learned and, perhaps, pick up some new characters. Using Pinyin to input Chinese characters on the computer can bypass one of the biggest difficulties in learning to write Chinese (Xu & Jen, 2005). The possible impact of the Pinyin Input Method on Chinese learners’ FonF will be explored in this study.

**FonF for heritage learners**

Existing research literature on FonF does not seem to include heritage learners. A widely cited definition of a heritage language learners follows: “a heritage learner refers to a language student who is raised in a home where a non-English language is spoken, who speaks or at least understands the language, and who is to some degree bilingual in that language and in English” (Valdés, 2001, p. 38).

Form-focused instruction and FonF is likely to be pedagogically useful for heritage learners because the primary aim of FonF is to promote accuracy, and heritage learners usually need to improve accuracy of both their oral and written output in the target language. Limited research literature exists on heritage learners, and almost no research on heritage learners’ FonF is available. But the limited research literature still provides some help with our understanding of heritage learners’ FonF, especially in CMC tasks. For example, Zhang
(2004) found that Chinese heritage learners were concerned about the accuracy of their written output in their online chats and that their existing knowledge of vocabulary and grammar in their conversational skills ensured them a high rate of accuracy in online chats. Blake and Zyzik’s (2003) study explored interaction between heritage speakers and regular learners of Spanish. They found that the demands of electronic chatting forced participants to produce output in the target language, and the Spanish heritage learners were found to have an effective opportunity to expand their English-Spanish bilingual linguistic repertoire in the CMC environment, including grammatical, textual, illocutionary, and sociolinguistic competencies.

Therefore, an investigation of FonF in classes mixed with both heritage learners and non-heritage learners is pedagogically and theoretically worthwhile.

The study

A classroom descriptive study from an action research approach

Because the researcher was also the instructor of the two classes, this study adopted an action research approach. Therefore, the immediate findings affected the instructor/researcher’s instructional decisions. The challenges of being a researcher and instructor in the two classes will be discussed in the next section of the article.

Like many studies on FonF, e.g. Ellis et al. (2001), Sotillo (2005), and Williams (2001), this study was descriptive. Ellis et al. (2001) agreed with Seliger and Shohamy's (1989) sense of descriptive study. Their shared definition is that descriptive study seeks to "describe naturally occurring phenomena without experimental manipulation" but has a "narrower scope of investigation" (p. 124). Ellis et al. argued that the incidental and extensive nature of FonF is usually difficult to research, and, therefore, the study of it requires a
descriptive approach. In their words, instead of an experimental approach, they argued for a descriptive approach which entails “observation of meaning-focused instruction to subsequently identify and analyze the focus-on-form episodes that occur” (p. 412).

This descriptive study aimed to expand the literature by identifying the Chinese FonF examples and patterns generated by students and technology in an online context and to contribute to the understanding of FonF in Chinese language learning and teaching. It examined learners’ linguistic products, e.g. texts in synchronous CMC, and learners’ perception of FonF as revealed in journals and discussions over two consecutive semesters.

**The context and the researcher**

The instructional context for the study was two intermediate level Chinese Mandarin classes in a U.S Midwest university across two consecutive semesters in the 2004-2005 academic year (known as Chinese 201 in Fall, 2004 and Chinese 202 in Spring, 2005). The courses were taught in a blended format: face-to-face instruction in a digitally-enhanced classroom plus a Chinese WebCT-supported online learning environment. The researcher and instructor of the courses was a native speaker of Chinese with major research interests including online language learning and computer-assisted second language acquisition.

The role of the instructor and researcher was challenging. On the one hand, the instructor/researcher had the first hand information about the complexities and subtleties of technology integrated instructional practices in real classrooms, and this action research approach narrowed the gap between research and practice. On the other hand, the instructor/researcher had to weigh on the students’ classroom learning needs with the researcher’s needs. The instructor/researcher of this study had experiences in doing action research before in other Chinese language classrooms, and, therefore, she was sensitive to
and relatively skilled in adjusting to unplanned elements of teaching such as FonF from planned activities and lessons. This judgment and adjustment itself contributed to the professional development that action research has promised: “Because action research is a constructivist process set in a social situation, teachers’ beliefs about learning, their students, and their conceptions of themselves as learners are explicitly examined, challenged, and supported” (Bransford et al., 2000, p. 199).

The research questions

This study aimed to address the following research questions:

1. Did learners in a learner-centered, communicative online learning environment spontaneously attend to form in their interaction between learner-learner and learner-technology resources?

2. If learners did attend to form in their interaction between learner-learner and learner-technology resources, what kinds of the forms did students attend to in different dimensions of interaction?

3. How did student- and technology-generated FonF influence the instructor’s pedagogical practices in the classroom?

Research participants

Eighteen students participated in Chinese 201 and sixteen students participated in Chinese 202. Fourteen of the students took both Chinese 201 and Chinese 202. All participants and, in addition, the parents of those who were under eighteen years old signed research consent forms. Both classes mixed non-heritage learners, Chinese-American heritage learners, and international heritage learners. The students brought a great diversity of ethnic and educational backgrounds, previous experiences with Chinese language and
culture, and proficiency levels to the classes. Non-heritage learners were traditional “pure”
foreign language learners of Chinese, who were in their second year of formal instruction in
Chinese, and who had started to learn Chinese with no knowledge of the language in the
previous academic year. Chinese-American heritage learners were from Chinese-language
speaking families. Despite their diversified informal learning of and family exposure to
Chinese language, this was their first formal instruction in Chinese. Four of the American-
Chinese heritage learners were high school freshmen who took the college Chinese classes
because no Chinese language classes were offered at the local high school. These Chinese-
American heritage learners, as a result of growing up in Chinese-language speaking families,
had unbalanced language skills: advanced listening skills and some conversational skills but
very limited or undeveloped reading and writing skills. The third group of students,
international heritage learners, was from Malaysia and Hong Kong and had received various
years of formal instruction of Chinese and demonstrated higher Chinese language proficiency
levels. The international heritage learners’ self-reported learning needs were to learn Chinese
Pinyin (the sound system) and simplified Chinese characters.

Although the mixture of the diverse learners in the two classes was related to the
limitations of budget and instructors at this university, the inclusion of the diverse learners in
the study was a fortunate response to Ortega’s recent warning that researchers’ practice of
“making certain populations invisible while naturalizing others has deleterious consequences
from ethical, espistemological, and methodological standpoints” (2005, p. 434). Researching
the diverse learners in these two real classes responds to Ortega’s call for efforts to
“investigate a wider range of L2 populations and contexts for L2 learning and teaching” (p.
434).
Table 1. Numbers of research participants in Chinese 201 and Chinese 202

<table>
<thead>
<tr>
<th></th>
<th>Chinese 201</th>
<th></th>
<th>Chinese 202</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High school students</td>
<td>College students</td>
<td>Sub-total</td>
<td>High school students</td>
</tr>
<tr>
<td>IHL</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>CAHL</td>
<td>6</td>
<td>1</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>NHL</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>16</td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

Notes: CAHL=Chinese American heritage learners  
IHL=International heritage learners  
NHL=Non-heritage learners

The diverse proficiency levels added to the complexity of instructional practices in these two classes. Due to their limited previous formal instruction of Chinese, the four high school freshmen Chinese-American heritage learners started Chinese 201 with the lowest literacy proficiency: they recognized an average of about 40 Chinese characters. The only college-aged Chinese-American heritage learner, who grew up in a small rural town where she did not receive any formal instruction of Chinese language but developed her Chinese literacy in a supportive family with her parents and siblings, started Chinese 201 recognizing more than 800 Chinese characters. A study specifically examining Chinese-American heritage learners was reported in chapter 2 of this dissertation. Also, a detailed demographic information about the students in Chinese 202 is provided in chapter 4. What requires mention is that the students in Chinese 201 and Chinese 202 had similar demographic information. A more detailed demographic information is available in Chapter 4.

**Data collection and analysis**

Both linguistic and perception data were collected for the examination of students’ attention to form. The linguistic data was the written texts collected from students’ online
chats. The perception data was the students’ perceptions and reports of their attention to forms revealed in discussions and reflective journals. All these data were saved in Chinese WebCT from August 15, 2004 to December 15, 2005 and from January 5, 2005 to May 15, 2005.

In the seven online chats students did in the two classes, students were not able to chat in Chinese characters very often because of technical problems, the students’ diverse proficiency levels, and a limited time frame. The students used mixed codes of English, Chinese characters, and Pinyin symbols in their chats. Because Chinese characters are the medium in real-life communication and the target language form in the classes, utterances in the chats exclusively in Pinyin symbols and in English were not analyzed for this study. Only the data containing utterances with Chinese characters were analyzed. In the analysis of the linguistic data in learners’ online chats, the researcher used Ellis et al.’s (2001) categories of the types of linguistic items to guide identification of the FonF in the students’ linguistic product data. Although there are differences between English and Chinese, the four types of linguistic items listed below exist universally in any language. The four types of linguistic items identified by Ellis et al (2001) include the following:

1. Grammar: for example, determiners, preposition, pronouns, word order, word order, tense, verb morphology, auxiliaries, negation, question formation
2. Vocabulary: the meaning of open-class lexical items, including single words and idioms
3. Spelling: the orthographic form of words
4. Discourse: textual relations, such as text cohesion and coherence, and pragmatics, such as the appropriate use of specific forms according to social context.

(Ellis, et al, 2001, p. 424)

However, due to the differences between the Chinese and English languages, the researcher did not expect to use the four types to cover all the possible Chinese linguistic items; rather, she was ready to expand the types, when necessary, to include the Chinese specific linguistic items in FonF. Because of the student-centered nature of FonF and this online learning environment, it was also necessary to explore the students’ perception of FonF in their CMC. As to the analysis of students’ perception data, the researcher looked for patterns of and themes relating to FonF that emerged from the data analysis.

While FonF in learner-learner interaction has been widely researched, interaction between learners and technology resources has not. In the two classes, the students interacted with the Chinese interface of WebCT, and the online resources such as translation Web sites and online dictionaries in performing their communicative tasks. It would be necessary to research students’ perceptions of and their report on their attention to form in their interaction with technology resources. Because this study was concerned about incidental attention to form, the instructor/researcher did not design any specific procedure or tasks in collecting students’ interaction with technology resources; instead, the data was identified from the students’ discussions about and reflections on the use of online dictionaries and comments on the Chinese version of WebCT.
Results related to research questions 1 and 2

The research findings indicated that in a learner-centered, communicative online learning environment, the learners did spontaneously attend to form. In both online chats and their interaction with technology resources, the students exclusively focused on vocabulary/unknown words, but not on grammar or discourse. Chinese spelling, caused by the Pinyin Input Method, also received students’ attention. Students’ incidental attention to form in the learner-learner interaction and learner-technology resources interaction affected the instructional practices in the classroom in a positive way.

The following section provides the research findings and answers to proposed research questions 1 and 2. Evidence that students frequently focused on form spontaneously is described below. The researcher provided the English translation to Chinese, but the errors remain uncorrected as in the students’ original posts in WebCT.

FonF in the students’ linguistic output in Chinese online chats

Smith (2004) suggested that synchronous CMC seems to be an ideal medium for students to benefit from interaction primarily because the written nature of the text-based conversation allows a greater opportunity to attend to and reflect upon the form and content of the message, while retaining the conversational feel and flow, as well as the interactional nature, of verbal discussions. Focus on form in synchronous CMC—online chats—was explored in the study.

The instructor’s main pedagogical purpose in using online chats in the classes was to help students develop language fluency and to help learners know each other better and, therefore, feel comfortable learning in a class mixed with diverse learners. In the students’ seven chats in Chinese 201 and 202, no specific tasks or topics were ever assigned to the
students. Because of students’ diverse proficiency levels and learning needs, no specific writing system was required in the students’ chats, although using Chinese characters was strongly encouraged. The students’ chat scripts were mixed with Chinese Pinyin symbols, English, and Chinese characters. As stated previously, episodes with only Pinyin symbols and English were not analyzed for this study. The instructor did not participate in the chats unless there was a need for help. Overall, the chat exchanges were short in length and simple in grammar. All the students’ attention to the form was trigged by their unknown vocabulary.

Following are examples of students’ FonF in chats. In examples 1 and 2, learners’ attention on the unknown words is the negotiation of meaning; that is, the negotiation “is entirely communicative in orientation, as it is directed at enabling the participants to achieve mutual understanding in order for communication to proceed” (Ellis et al., 2001, p. 414). There was some ungrammatical Chinese in the following excerpts. It deserves mention that the learners did not correct each other’s grammar errors but all their attention was directed to vocabulary, as revealed in the example. In the examples, CAHL refers to a Chinese-American heritage learner, NHL is a non-heritage learner, and IHL is an international heritage learner.

Example 1 is an excerpt of chat utterances from some students’ conversations about a British band.

CAHL 1: 他们的music 有奇怪lyrics (Translation: Their music has weird lyrics)
NHL 1: 有奇怪means what?
CAHL 1: has weird
NHL 1: weird, 什么pininyin? (Translation: What is the Pinyin for “weird?”)
IHL 1: qi guai (note: Pinyin symbols for the Chinese characters 奇怪)
CAHL 1: qi guai (note: Pinyin symbols for the Chinese characters 奇怪)
Example 2 is an excerpt from some students’ chats about their traveling plans. A non-heritage learner did not know the Pinyin of the characters, nor could he type the two Chinese characters. He asked for the Pinyin symbols for the characters.

NHL 1: 是, 我也有 relatives in Malaysia (Translation: Yes, I have relatives in Malaysia, too)
NHL 2: 我没有亲戚 in costa rica and mexico (Translation: I have no relatives in Costa Rica and Mexico)
NHL 1: 亲戚 有什么 pinyin? (Translation: What is the pinyin for “relatives”?)
CAHL 2: 我不会读中文 (Translation: I do not know how to read the Chinese [of “relatives”])
NHL 2: qinqi (Note: the pinyin symbols for “relatives”)
CAHL 2: 谢谢 (Thanks)
CAHL 2: 我有亲戚 in Chicago (I have relatives in Chicago)

Example 1 is a case of negotiation of meaning triggered by unknown characters. In Example 2, the students were negotiating the orthographic form of the characters by asking for the Pinyin symbols. In total, there were six cases of negotiation of meaning like Example 1; and four cases of negotiation of form like Example 2. In seven of the ten cases, non-heritage learners asked for the meaning or Pinyin symbols of the unknown characters; in the remaining three Chinese-American heritage learners initiated the FoF.

The following example provided interesting evidence of a relatively advanced Chinese-American heritage learner’s attention to a new word in the negotiation of form; here, the negotiation “is didactic in orientation, as it is directed at improving accuracy and precision when no problem of understanding has arisen” (p. 414). Example 3 indicated a Chinese-American heritage learner’s frustration about slow Internet speed.

CAHL 3: 我的网好满,慢,瞒,还是慢啊? (Translation: My internet is so slow.)
IHL 2: 第二个字 (Translation: The second character).

Here, CAHL was not sure which character was the one that she should use in this context to express her meaning “slow.” Therefore, she listed four possible characters, “满 (măn),” “慢 (màn),” “瞒 (mán),” and “漫 (màn),” which have the same sounds but different tones. The question mark at the end of the sentence signaled her need for help in choosing the right character. Another student helped her by pointing out that the second character, 慢, was correct. It merits mention that the Pinyin input system generated the multiplicity of homophonic characters (同音异义字) in Chinese, a very important feature of the Chinese language. The Chinese-American heritage learner knew how to say the character but did not recognize the Chinese character. This example is an important illustration of heritage learners with much more competent listening and speaking skills than reading and writing skills in the language. The Pinyin Input Method of the Chinese character addresses heritage learners’ learning needs and weakness appropriately and has great potential with heritage learners’ acquisition of Chinese characters.

At the same time, the examples of the multiplicity of homophonic characters 满 (măn),” “慢 (màn),” “瞒 (mán),” and “漫 (màn)” could be a spelling mistake, but, in this case, this error is very Chinese language specific. That is, the characters are all correct in orthography but incorrect for the context. Thus, even the researcher, as a native speaker of Chinese, would use Ellis el al.’s category of spelling for this kind of form in the Chinese language, despite the fact that the meaning of spelling is fundamentally different from
English. In Chinese, we have a name for these misused characters, 别字 (bié zi). These characters are incorrectly chosen due to the students’ incorrect pronunciation, their ignorance of the correct characters, and/or pure absent-mindedness. This issue of incorrectly chosen characters or misused characters (bié zi 别字) in computer inputting is unique to the Chinese language and has aroused Chinese language researchers’ and educators’ attention. 

Addressing the differentiation between misused characters, 别字 (bié zi), and incorrectly spelled characters, 错字 (cuò zi), is another important instructional issue in this technology-integrated classroom, which will be discussed later in this article.

In total, there were 6 cases of the Chinese spelling or homographic characters FonF, all triggered by Chinese-American heritage learners which is summarized in the following table.

<table>
<thead>
<tr>
<th></th>
<th>Unknown characters (meaning/Pinyin/form)</th>
<th>Spelling/ homophonic characters</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAHL</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>IHL</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NHL</td>
<td>7</td>
<td>0</td>
</tr>
</tbody>
</table>

Notes: CAHL=Chinese American heritage learners IHL=International heritage learners NHL=Non-heritage learners

In summary, in online chats, the forms students attended to were all unknown characters but also included some homophonic characters in Chinese language. This corroborates evidence presented by Smith (2004): “in a CMC environment, learners often choose to negotiated unknown lexical items and that this negotiation is quite effective,
leading in most cases to some acquisition of basic word meanings of previously unknown
lexical items” (p. 388). As in face-to-face interaction, lexical items usually trigger the great
majority of computer-mediated negotiation (Smith, 2004).

**Students’ attention to form in the interaction with technology resources**

**Students’ attention to the form in the Chinese WebCT interface**

The Chinese WebCT interface added one more dimension of interaction for the
learners in the classes. An unexpected but interesting finding that emerged from the students’
reflective journals and threaded discussions indicated that the Chinese characters on the
Chinese WebCT interface were the form that the students attended to the most, at least at the
beginning of the Chinese 201 class. The Chinese-American heritage learners and the non-
heritage learners reported difficulty in functioning in Chinese WebCT because they did not
recognize the characters on the WebCT interface. The two following examples of the
students’ messages posted in the discussion boards are evidence of their attention to the form,
i.e. the Chinese interface:

“Can you put Pinyin with the characters on the interface? That would help us
learn a lot...” (Message No. 786 titled “Interface,” posted at 14:26 p.m. on
October 20, 2004)

One minute later, another student echoed the request for help:

“Yes!!! That would help a lot” (Message No. 787, titled “Interface,” posted at
14:27 p.m. on October 20, 2004)

Because they did not recognize the Chinese characters on the WebCT interface during
the first few weeks of Chinese 201, the lower-level students lost or forgot many assignments
and class notes and posted several messages incorrectly. Many of the following characters
appearing on the WebCT interface were not taught in class, nor had they ever appeared in any of the Chinese textbooks students had used:

删除 (Delete), 主题 (Topic), 显示 (Display), 私人回复 (Reply privately), 引用 (Quote), 下载 (Download), 附件 (Attachment), 添加记录 (Add entry).
预览 (preview), 取消 (cancel).

The instructor took advantage of the Chinese interface and the challenges it presented to the students and used a quiz on November 19, 2004 on WebCT’s Chinese interface to test students’ attention to these forms. Before the quiz, a review guide containing the English translation to the Chinese characters on the WebCT interface was provided to the students. Their responses in their reflections on the quiz revealed their efforts to acquire the Chinese characters on WebCT:

“I don’t think the quiz helped me know more about the WebCT tools, but actually using the WebCT tools, etc, helped a lot… (as to the learning of Chinese characters), there were things like “close,” “return,” and “post” that I learned… I like WebCT a lot better now because I know how to deal with it effectively now. I used to hate it because there was just too much stuff, but now I like it a lot.” (Message No. 498 posted by a Chinese-American heritage language learner on November 29, 2004)

“Yes, the quiz is very helpful for me, I have learned and remember a lot of words while taking the quiz… (Message No. 507 posted by a non-heritage language learner on November 29, 2004)

The quiz results and the students’ reflections suggest that these characters on the Chinese WebCT interface attracted students’ attention, and students were likely to acquire some of them, if not all, in their frequent use of the WebCT environment in the two semesters. Further research investigating students’ interaction with the technology resources may provide insights into more effective pedagogical use of learning management systems.
like WebCT in the target language for beginning- and or intermediate-level learners. The implication of the students’ attention to the characters on the Chinese interface will be discussed in a later section.

**Students’ attention to the form in the use of online dictionaries and translation websites**

Online dictionaries and English-Chinese translation web sites were easily accessible to students, and the students did use them. However, the students did not seem to have a positive opinion of these online tools. For example, in the comments they provided on the use of online translation tools when they were writing their Chinese essays in Chinese 202, some students made the following remarks:

“I did not use it (online dictionary) at all, though I think I probably should, but the dictionaries are sometimes not accurate.”

“I do not need translation tools because the Web sites do not provide the exact meanings.”

“I try not to use them (translation websites) because they are always wrong!!! Sometimes I use them for vocabulary.”

Although no information was collected about what specific Web sites and online dictionaries students used in these two classes, all these comments indicated that students not only paid attention to the Chinese translation of words and sentence provided by the online tools, but they also examined their correctness. The learners’ perceptions of the inaccuracy of the online dictionaries and translation Web sites demonstrated the learners’ attention to the vocabulary form. However, learners’ examination of the accuracy of words and grammar provided by the online tools was beyond the scope of this study. Further research should look into this issue.
Different groups of learners’ attention to form

William (1999) addressed the issue of the relationship between learners’ proficiency and learner-generated attention to form and found a trend that suggested learners with more advanced proficiency are more willing to initiate language-related episodes involving attention to form. Although this study did not specifically address the relationship, the researcher did notice some differences among the three groups of learners. Based on the instructor/researcher’s observations, the Chinese-American heritage learners attended much more to form than non-heritage learners. Heritage learners appeared to draw on their existing knowledge of Chinese grammar and vocabulary and had much more advanced auro-oral proficiency levels. As revealed in this study, because of the use of Pinyin Input Method, the Chinese heritage learners’ conversational skills had a positive influence on their written CMC communication, which is consistent with findings in a previous study on the use of online chat by Chinese heritage learners (Zhang, 2004). In addition to the Chinese language learners’ transferability between oral and written skills in CMC, further studies should also look carefully at the form heritage learners and non-heritage learners tend to focus on at different language acquisition developmental stages.

This study suggested that CMC may be especially useful for heritage learners who have an existing working knowledge of the target language. On the benefits of CMC, Smith (2004) suggested the following:

“CMC in the L2 classroom may be an extremely useful device for facilitating a focus on form, because it allows us to combine learner-centered interactional benefits provided by CMC with those offered by those communicative tasks found to enhanced NNS-NNS (i.e. non-native speakers) interaction and negotiation (see Pica et al., 1993). This pedagogical asset enables learners to practice existing knowledge as well as move lexical
development forward through a medium that may enhance the salience of linguistic features.” (p. 389)

Further studies should explore use of CMC in enhancing heritage learners’ acquisition of the heritage language, in addition to the traditional foreign language learners.

The international heritage learners were the most advanced learners in the classes. Instead of initiating the language-related episodes, these learners tended to provide corrective feedback and help the lower-level learners with unknown words. However, an interesting and unexpected finding that emerged from this study centers on the international heritage learners who are usually excluded from the language classrooms and ignored in the research literature. The international heritage learners reported in face-to-face meeting class discussions that the Pinyin Input Method helped them with their pronunciation of many Chinese characters. These international heritage learners, influenced by the different Chinese dialects spoken in their families, did not speak standard mandarin Chinese. Therefore, when they typed Chinese characters, they could not get the right Pinyin symbols when trying to type the Chinese characters, although they did know the characters they wanted to type. This struggle with pronunciation pushed the students to focus on the Pinyin symbols for certain characters they did not pronounce correctly. For example, students that have the family names “王” (Wáng) and “黄” (Huáng) could not get the correct Pinyin symbols because they usually spelled their family names in English based on their pronunciation in dialects as “Ong,” “Ng,” or “Wong.” In this case, the Pinyin Input Method provided international heritage learners opportunities to focus on pronunciation of the Chinese words they already knew. This finding supported the inclusion of international heritage learners in
the intermediate-level Chinese language classes despite the fact that their knowledge of Chinese characters was beyond the regular learners at this level. International heritage learners’ learning of Chinese and identity development deserve further attention in this field.

Summary of the results related to research questions 1 and 2

In summary, learners in this learner-centered, communicative online learning environment spontaneously attended to form. All the forms students attended to in online chats were vocabulary. This finding is consistent with results of other studies (e.g. Smith, 2004). In the students’ interaction with technology resources, the Chinese WebCT interface attracted the students’ attention and provided them opportunities to learn many new and useful Chinese words to function effectively in the WebCT environment. And the use of online dictionaries and translation Web sites aroused students’ concerns about the accuracies of the translations.

The second type of form attended to was spelling. Here, spelling should be understood in the context of the Chinese language. That is, although the orthographic forms of the characters generated by the Pinyin Input method were correct, the learners chose the wrong characters for the context, that is, bié zì 别字, which is related to the multiplicity of homophonic characters (同音异字). The Pinyin Input Method generated students’ attention to the multiplicity of homophonic characters (同音异字) in Chinese, a very important feature of the Chinese language, and phonetic compounds of Chinese characters.

The students’ incidental attention to form influenced the instructor’s classroom practices which will be reported in the following section to answer research question 3.
Results leading to answers to research question 3

The third question addressed the impact of students’ attention to form on the instructor’s classroom practices. The students’ incidental attention to form changed the instructional practice in these classes. The instructor had to deal with many unpredicted or unplanned learning materials, teaching moments, and learning needs. Van Lier (1991; 1996) suggested a balance between planning and improvisation (i.e. the actual behaviors that arise during the process of a lesson which have not been planned for), the two important dimensions of learning, should be achieved:

The term “balanced” suggests that in most cases a lesson which is so tightly planned (and implemented) that there is no room at all for improvisation, and conversely, a lesson which is not planned at all and therefore entirely improvised, would generally be considered unbalanced and perhaps not entirely effective. (Van Lier, 1996, p. 200)

The seeking of the balance between planning and improvisation, and teaching and research added value to the action research approach. Here are the changes and improvisations the teacher/instructor made in the classes.

The teacher/researcher found that the automatically retrieved and archived chat logs in the chat rooms and the messages in the discussion boards in Chinese WebCT provided good and authentic materials that met individual students’ needs and were appropriate at their acquisition developmental stage. Therefore, students’ authentic linguistic products, online chat logs/scripts and the discussion messages, became effective instructional materials, especially for error correction. Error correction sessions took place in the face-to-face class meetings in which all students’ errors in online communication (chats and essay writing tasks) were listed and mostly identified by the students. The errors were also included in the
quizzes and tests. The students reported that the correction of their own errors in online communication was very effective in helping them learn Chinese, especially grammar. This finding is consistent with the results and pedagogical suggestions yielded from studies in other language classrooms. For example, Blake (2000) indicated that a significant advantage of network-based communication is that the communication logs (e.g. email, discussion messages, and chat logs) can be saved for later review by learners and teachers and can be valuable resources for both. Similarly, van Deusen-Scholl et al. (2005) suggested that the authentic output students have produced in CMC can become a vehicle for teaching and learning, and the instruction can be targeted directly to students’ actual needs. Based on the teacher/researcher’s teaching practices and research findings in this study, the teacher/researcher would agree with Van Deusen-Scholl et al. (2005) on that “integrated CMC/classroom activities support a focus-on-form approach that…develops from an authentic context of practice in which language is produced for real purposes of communication” (p. 673).

Because of the use the Pinyin Input Methods, students frequently attended to the radicals and phonetic compound Chinese characters, and they demanded more knowledge of these features. Therefore, extra assignments and exercises on Chinese radicals and phonetic compound Chinese characters were provided in Chinese 201. At this stage of the students’ learning, neither the textbook nor the corresponding workbook emphasized the importance of radicals and phonetic compounds or provided extra exercises on the topics, although radicals and phonetic compounds are usually introduced in first-year textbooks. This finding reinforces the need to attend to students’ developmental acquisition of the language in specific stages, rather than the practices that the instructors passively follow a pre-designed
syllabi or the textbook, especially when the classes consist of learners of diverse proficiency levels.

As reported previously, the instructor added a quiz to help students learn Chinese characters on the interface of Chinese characters on the interface of the Chinese WebCT. Further, the use of Chinese WebCT brought the teacher/researcher’s attention to the issue of both “what” characters to teach and “how” to teach Chinese characters to a class of mixed traditional and heritage learners of Chinese. The students’ initial attention to the Chinese characters on the WebCT interface suggested the necessity to teach students Chinese vocabulary frequently used in real-world virtual communication. So far, to the instructor/researcher’s best knowledge, none of the Chinese textbooks used in North America introduce the vocabulary needed for students’ effective virtual communication in Chinese, such as “download,” “upload,” “reply,” “send,” “search,” “subject,” “topic,” “browse,” “delete,” “log in,” “log out,” and “display,” although the field of teaching Chinese as a second/foreign language has argued for the teaching of high-frequency Chinese characters (e.g. Wang, 1996).

As suggested by this study, high-frequency characters should include those frequently used both in daily interaction and most text-based online virtual communication. Furthermore, research literature (e.g. Lam, 2000, 2004) has suggested that the important relationship between identity and literacy development in TESOL deserves further examination as “globalized ‘virtual communities’ emerge on the Internet and cultural products, symbols, and images circulate transnationally” (Lam, 2000, p. 467). It is said that “Chinese will be the No.1 Internet language by 2007 (MyCoolCareer, February 2, 2004).”
Therefore, teaching students Chinese high-frequency vocabulary used online and helping them develop literacy in globalized virtual communities is important.

Another practical implication on teaching Chinese characters points to what characters we should teach to students, especially at the intermediate or lower level. Acquisition of Chinese characters is always the most difficult and challenging task to Chinese language teachers and learners. There are six categories of Chinese characters: 象形pictographs (xiàng xíng), 指事simple ideographs (zhǐ shì), 会意compound ideographs (huì yì), 形声phonetic compounds (xíng shēng), 假借loan characters (jiā jiè), and 转注analogous or derivative characters (zhuǎn zhù). As reported by Zhou (1978, cited in DeFrancis 1984, p. 110), about 81% of Chinese characters are the phonetic compounds, 形声 (xíng shēng), which are composed of a phonetic component and a signific/meaning (or commonly known as radical) component (Wang, 2004). In this study, because of the Pinyin Input Method used, students attended much more to the phonetic compounds, 形声 (xíng shēng) characters.

In terms of the education of Chinese heritage learners, this study suggests that by using the Pinyin Input Method, heritage learners are able to write on the computer the Chinese characters they can say, which encourages and motivates the heritage learners to read and write Chinese characters they know orally and aurally. Therefore, it may be reasonable to argue that first teaching the characters heritage learners have already acquired orally and aurally would be an effective way to teach Chinese characters using computers,
i.e. Pinyin Input Method. For traditional learners, it would be helpful to teach more phonetic compounds 形声 (xíng shēng). On the one hand, the radicals, which are the semantic indicators of the Chinese characters, often give clues to the meaning of Chinese characters. On the other hand, the radicals help students learn how to look up a new word in a traditional dictionary (not electronic or online ones) which is usually arranged based on the radicals and the numbers of strokes of the characters. The attention to the phonetic compounds, 形声 (xíng shēng), also point to the necessity of instruction on the differentiation of Chinese homophonic characters (同音异义字). Further research on the developmental stages of Chinese language acquisition and classroom pedagogy is needed to investigate the students’ acquisition of different types of Chinese characters.

Fourth, as the impact of technology on the students’ attention to form reveals in this study, the students used many new words (not taught in class or vocabulary) by using online dictionaries and real communication with their peers. This helps the students accumulate the so called “critical mass” of Chinese characters. Although this study does not indicate the number of Chinese characters that constitutes the “critical mass,” this study does reveal that vocabulary was the form that students frequently tended to in CMC. Thus, CMC should be used to accelerate both heritage and traditional learners’ acquisition of Chinese characters.

Limitations of the study

This classroom descriptive study adopted an action approach. It investigated students’ incidental attention to form in their interactions with peers and the technology resources in a Chinese WebCT-supported learning environment. As stated previously, the technical
problems, the students’ diverse proficiency levels, and limited time framework prevented the instructor/researcher from collecting more online chat data and students’ interaction with the technology resources. Further research should address these problems.

**Implications and conclusion**

Research findings of this study revealed students’ frequent focus on vocabulary in their interaction with other learners and with technology resources. As Grace (1998) suggested, improvements in the quality of exposure to and interaction with new vocabulary may compensate for the relatively limited amount of exposure of new vocabulary in the second language classroom. This study provided strong evidence that students were both consumers and providers of new vocabulary in meaningful CMC tasks. Technology, such as online dictionaries and translation Web sites, assisted learners with learning and using new words. Students’ examination of the correctness of the words and sentence structures provided by the online translation tools also provide evidence that students did focus on form. The Chinese WebCT interface provided students opportunities to learn new vocabulary through interaction with the interface. And these new words on the WebCT interface, as the researcher argued, are frequently used and, therefore, useful to the students when they engage in interaction in Chinese in a virtual community. In addition, the Pinyin Input Method played a significant role in students’ production of Chinese characters. It enabled heritage learners to manipulate their prior knowledge of Chinese pronunciation and conversational grammar gained from their growth Chinese-language speaking family. Thus, CMC such as that outlined in this study, online chats, allows for the introduction of new vocabulary within a FonF context. Moreover, the Pinyin Input Method and the CMC tasks demonstrated even greater potential in enhancing the transferability of heritage learners’ oral competence to
written competence. This compelling issue of transferability from oral to written competence deserves further investigation. The unique features of the Chinese language definitely deserve more research into FonF. Furthermore, more research should be done on both heritage and non-heritage learners to gain insight into effective instruction of Chinese to all learners.

In the interaction between the learner and the technology resources, the study called for further research into learner’ attention to the form generated by these online tools and its impact on language learning, as the use of online dictionaries and translation tools becomes more frequent.

As to the effective instruction of heritage learners, further research should investigate the scaffolding already acquired conversation skills can provide to heritage learners’ development of literacy skills, especially with the use of technology.

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CHAPTER FOUR  (RESEARCH ARTICLE 3)

ESSAY WRITING IN A CHINESE WEBCT DISCUSSION BOARD

Introduction

This paper reports on a classroom-based study on the use of Chinese WebCT discussion boards to support essay writing in a second-year Chinese language class consisting of mostly heritage learners at a U.S. Midwest university. The study aims to fill the void in the research literature on computer-assisted Chinese writing pedagogy, writing instruction for heritage language learners, and classroom writing for the purpose of community building. Although there has been a wealth of research in writing instruction in English composition, English as a second/foreign language (ESL/EFL), and other commonly taught languages (see for example, Thorson, 2000), little research literature exists on writing instruction for Chinese as a second and foreign language (CSL/CFL) either at a theoretical or practical level. In fact, Chinese writing instruction is one of the least researched issues in the CSL/CFL field. A recent search for literature on Chinese writing/composition in the Journal of Chinese Language Teachers Association (1966-2007) reveals few articles available on the pedagogy of teaching writing except Hong (1998) who reported an empirical study of Chinese business writing and Mou (2003) who shared her experimental experiences in incorporating writing into a regular first-year Chinese classroom. As far as Chinese writing is concerned, what has received most of the attention is how to teach handwritten Chinese characters, and whether the learners should handwrite Chinese characters or use computers to type Chinese characters. Handwriting Chinese character has been said to be the biggest hindrance to Chinese language learners, and the challenge of writing characters prevents
many Chinese language learners from moving beyond introductory learning (Xu & Jen, 2005). If the writing of Chinese characters alone has been difficult to the learners, developing writing skills in Chinese seems to be even more challenging. To accelerate Chinese language learners’ writing skill development, Kubler (2002) suggested a computer-assisted approach to Chinese composition, which has been used more frequently in China itself. He stated that computer-assisted approaches “can speed up the composition process by allowing learners to focus on composition per se rather than on the production of individual characters which is, after all, the most time-consuming factor in traditional handwritten composition” (Kubler, 2002, p. 114). Therefore, researching the computer-assisted Chinese writing and the pedagogical implications on classroom instruction is worthwhile.

In foreign language classrooms, heritage learners are a unique group of language learners because of their home exposure and personal connection to the target language and culture. Heritage learners are traditionally excluded from the foreign language classroom (Valdés, 2006) and, therefore, not researched in instructional settings. But, in recent years, heritage language education has emerged as an important field and calls have been placed for research on effective education of these learners. Ortega (2005) expressed her concerns about the narrow language learner population being researched in the field by pointing out that “in many studies only ‘pure’ foreign language learners are included in order to improve our ability to generate causal explanations by controlling as many background variables as we can” (p. 433). She called for efforts to “investigate a wider range of L2 populations and contexts for L2 learning and teaching” (p. 434). Ortega’s argument lent strong support to research efforts in real classrooms that include both heritage and non-heritage learners with distinctive backgrounds. In the field of heritage language education, educators and
researchers are aware of the differences between heritage learners and non-heritage learners in language classrooms, but few research efforts and instructional practices exist to tap into and develop the heritage learners’ language skills beyond their existing linguistic and cultural repertories and to help develop heritage learners’ identities. Because developing reading and writing skills is usually the major learning need and goal of the heritage language learners, research of heritage language learners’ essay writing in Chinese is much needed.

Because this study was conducted in a real classroom, the important context of the instruction and research will be presented first, followed by the research methods. Next, theoretical underpinnings and pedagogical considerations in the design of the essay writing task will be detailed, and the evaluation of the task and research findings will be presented. A conclusion will follow the discussions and implications.

**Research and instruction site, and research participants**

The study was conducted in a second-year, regular Chinese language class consisting of heterogeneous learners in a U.S. Midwestern university (see Table 1 for students’ demographic information). This class was not defined as a writing class; instead, it aimed to develop learners’ four language skills: listening, speaking, reading, and writing. The class was delivered in a blended format using a Chinese WebCT-supported online learning environment and face-to-face instruction in a digitally-enhanced classroom. Fourteen of the students in the class completed the first class in the series of second year Chinese classes (Chinese 201) in the previous semester. Because no Chinese language classes were available at the local high school, some high school students were enrolled in the college-level Chinese language courses at this university. Four of the high school students were freshmen Chinese American heritage learners, and Chinese 201 and 202 were the first formal Chinese
instruction they received. The Chinese American heritage learners met the description in Valdés’s widely cited definition of a heritage learner: “a language student who is raised in a home where a non-English language is spoken, who speaks, or at least, understands the language, and who is to some degree bilingual in that language and in English” (Valdés, 2001, p. 38). These heritage learners possess unbalanced language skills; that is, they are competent in listening and speaking, but their reading skills remain undeveloped. Therefore, their major learning need and goal was to develop reading and writing skills. On the other hand, the international heritage learners in the classroom completed Chinese coursework in various years in their home countries and possessed relatively balanced Chinese language skills. Their linguistic biographies revealed that they took the Chinese classes to learn simplified Chinese characters and Pinyin, which is the sound system of the Chinese language. The last group of learners in the class, non-heritage learners, was traditional learners of Chinese as a foreign language.

After the first semester’s instruction of Chinese in Chinese 201, the students were accustomed to the use of Chinese WebCT and the format of blended learning, and the four high school freshmen survived their first semester of studying a college course. These four high school students started Chinese 201 with an average knowledge of about 40 Chinese characters. After one semester’s study of Chinese, these learners were eager to improve their reading and writing, as revealed in their linguistic biographies, and reflective journals. The continuing international students enjoyed the large amount of communication and fun in Chinese 201 and were motivated to take Chinese 202 even though they were warned about the more rigorous assessment of them in Chinese 202.
Table 1: Research participants’ demographic information

<table>
<thead>
<tr>
<th>Student</th>
<th>Sex</th>
<th>Educational Level</th>
<th>First language</th>
<th>Home Language(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAHL1</td>
<td>Female</td>
<td>High school freshman</td>
<td>English</td>
<td>English &amp; Mandarin</td>
</tr>
<tr>
<td>CAHL 2</td>
<td>Female</td>
<td>High school freshman</td>
<td>English</td>
<td>English &amp; Mandarin</td>
</tr>
<tr>
<td>CAHL 3</td>
<td>Male</td>
<td>High school freshman</td>
<td>English</td>
<td>English &amp; Mandarin</td>
</tr>
<tr>
<td>CAHL 4</td>
<td>Male</td>
<td>High school freshman</td>
<td>English</td>
<td>English &amp; Mandarin</td>
</tr>
<tr>
<td>CAHL 5</td>
<td>Female</td>
<td>College sophomore</td>
<td>English</td>
<td>English &amp; Mandarin</td>
</tr>
<tr>
<td>IHL 1</td>
<td>Female</td>
<td>College Senior</td>
<td>Malay</td>
<td>Malay &amp; Mandarin</td>
</tr>
<tr>
<td>IHL 2</td>
<td>Male</td>
<td>College sophomore</td>
<td>Malay</td>
<td>Malay, Mandarin &amp; Chinese dialects</td>
</tr>
<tr>
<td>IHL 3</td>
<td>Male</td>
<td>College senior</td>
<td>Malay</td>
<td>Malay, Mandarin &amp; Chinese dialects</td>
</tr>
<tr>
<td>IHL 4</td>
<td>Female</td>
<td>College junior</td>
<td>Malay</td>
<td>Malay, Mandarin &amp; Chinese dialects</td>
</tr>
<tr>
<td>IHL 5</td>
<td>Male</td>
<td>College junior</td>
<td>Malay</td>
<td>Malay, Mandarin &amp; Chinese dialects</td>
</tr>
<tr>
<td>IHL 6</td>
<td>Male</td>
<td>College junior</td>
<td>Cantonese</td>
<td>English, Mandarin, &amp; Cantonese</td>
</tr>
<tr>
<td>NHL 1</td>
<td>Female</td>
<td>College senior</td>
<td>English</td>
<td>English</td>
</tr>
<tr>
<td>NHL 2</td>
<td>Female</td>
<td>College junior</td>
<td>Portuguese</td>
<td>Portuguese &amp; English</td>
</tr>
<tr>
<td>NHL 3</td>
<td>Male</td>
<td>High school sophomore</td>
<td>English</td>
<td>English &amp; Malay</td>
</tr>
<tr>
<td>NHL 4</td>
<td>Male</td>
<td>College junior</td>
<td>Vietnamese</td>
<td>Vietnamese, English</td>
</tr>
<tr>
<td>NHL 5</td>
<td>Male</td>
<td>High school senior</td>
<td>Korean</td>
<td>Korean</td>
</tr>
</tbody>
</table>

Notes: (1) CAHL=Chinese American Heritage Learner  
(2) IHL=International Heritage Learner  
(3) NHL=Non-heritage learner  
(4) Chinese dialects spoken by these students at home included Hakka, Chaozhou dialect, and South Min dialect.

Research methods

A case study approach

This study aimed to investigate the design, implementation, and evaluation of an essay writing task. The researcher decided to use a case-study approach because case studies are appropriate when studying processes or interactions (Yin, 1984). In Yin’s definition, he pointed out that that a case study investigates “contemporary phenomenon within its real-life
In this study, the real-life context is this technology-enhanced Chinese language class. The essay writing task lasted a semester long and included different stages: drafting, peer-reviewing, revising, and final submission.

The study on this essay writing task has multiple purposes. The research aimed to test the soundness of the theoretical underpinnings behind the design of essay writing in a WebCT discussion board and to explore the process of achieving the desired learning goals which are summarized as follows:

First, the task aimed to develop a supportive and friendly classroom community to reduce the tension caused by the diverse proficiency levels, social status, and cultural backgrounds and to promote meaningful learning in the class;

Second, this task aimed to meet students’, especially the heritage learners’, learning needs and goals—to develop writing skills;

Third, this writing task aimed to test the affordances a WebCT discussion board provides to learners.

**The researcher**

The researcher was also the instructor and designer of the course. She sought to explore the role of pedagogical design and implementation of technology in writing instruction, to understand the role of the instructor in facilitating a learner-centered essay writing task, and to identify what changes she would make in her instructional practices throughout the semester-long essay writing task embedded in a regular second-year Chinese language classroom.
Data sources and analysis

To reach a full appreciation of the phenomena under investigation (Allwright & Bailey, 1991), case-study methodology demands multiple perspectives (Yin, 1984) in data collection and analysis. The data included (1) students’ essay drafts; (2) students’ essay peer reviews; (3) students’ reflections; (4) the instructor’s lesson plans and class notes; (5) students’ test scores in Chinese 202; and (6) the instructor’s reflections. The first five sources of data were saved automatically in the WebCT discussion board.

Both qualitative and quantitative data analysis was used. To examine the impact of the essay writing task on students’ Chinese language acquisition, a spearman-rho test was used to determine the correlation between the lengths of the students’ essay drafts and the students’ test scores.

The qualitative data analysis included opening coding, development of themes, focused coding, looking for patterns. The iterative processes were repeated till nothing new was found.

Because this task was designed to meet instructional and pedagogical needs in a real classroom, the rationale of the design of the task was as important as that of the research. Furthermore, to evaluate the soundness of the design of the task, introducing the underpinnings behind the design is necessary. The theoretical rationale of the essay writing task is presented in the following section.

Designing the essay writing task

The pedagogical consideration for a writing task

The design and implementation of this essay writing task was driven by the real-world needs in the classroom. After one semester’s instruction of these heterogeneous
learners in Chinese 201, the researcher observed several problems and learning needs that
demanded some immediate changes of practice. The major problem was tension among the
heterogeneous learners, mainly caused by students' diverse Chinese proficiency levels and
learning styles. Some action needed to be taken to address students' complaints and anxiety
about each other and to create a more friendly and supportive learning community. An essay
writing task seemed to be a reasonable remedy to the problem.

Second, students' progress and performance at the end of Chinese 201 yielded some
positive indications that the WebCT online environment was effective in developing students'
literacy, especially for heritage learners. Therefore, more challenging and focused efforts in
writing would be needed to promote continued development. As online chats and discussions
helped with students' informal writing, an essay writing task was appropriate to develop their
academic and formal writing in Chinese, a skill expected to develop at this stage of the
Chinese language learning.

Theories and concepts underpinning the design of the essay writing task

Educators and researchers in both the fields of educational technology and computer
assisted language learning have recognized the importance of theories in framing the design
of the learning experiences and pedagogical methodology. For example, Bednar et al. (1995)
argued that instructional tools and strategies must be based on accepted theory of learning
and cognition. In addition, Levy (1999) stated that theory can “provide a direction for
research and development and a basis upon which to evaluate designs to see if they work or
not” (p. 94), and Furstenberg (1997) pointed out that the interactive, collaborative, and
process-oriented features of technology necessitate the development of new pedagogical
practices in language instruction and emphasized the importance of task design. Accordingly,
by drawing on existing theories about tasks in face-to-face classrooms and by seeking applications of the theories in computer-mediated communication (CMC), Hampel (2006) suggested a range of theories, including second language acquisition (SLA) theories and sociocultural and constructivist theories, to approach the task design process in language learning, and Hampel (2006) discussed a number of different aspects of the design and examined the procedure of implementation.

In the design of this essay writing task, I drew on computer-mediated writing instruction, sociocultural theory and the constructivist perspective, and the concept of class community emerging from the latest research on technology and writing as discussed below.

**Computer-mediated writing instruction**

Phinney (1996) pointed out the importance of technology in writing and the educational paradigm shift: “As part of the changing culture of composition instruction, there is a new emphasis on de-centering authority, coupled with a recognition of the importance of collaborative learning, and a realization of the need for new models of writing and rhetoric” (p. 140). Moreover, there has been research on the effects of computer use on foreign language composition (see Reichelt, 2001). Ittzes (1997) and Florez-Estrada (1995) indicated that interactive computer-mediated writing produced texts of higher quality than non-computer writing. Research, for example Florez-Estrada (1995), also revealed that interactive computer writing (such as in email exchange or online dialogue) seemed to be more motivating or appealing to foreign language writers than non-computer writing. Accordingly, Pennington (2004, p. 75) summarized many benefits of technology-enhanced revision in foreign language and ESL writing: (1) a higher quality of revision in computer contexts as well as diversity and increase the breadth of revisions, (2) benefits of word processing for
correction of surface errors and local editing, (3) positive effects at the level of sentences or larger discourse units, (4) the computer’s ability to stimulate revision to positive effects in the quality of students’ writing, (5) the value of CALL-based pedagogy for increasing students’ awareness of and ability to apply revision strategies in their own writing. Research literature has also revealed the value of computer writing in enhancing second language acquisition of the target language. For example, Lee (2005) found that in a Web-based learning environment, daily essay writing is an effective task that promotes meaningful use of the target language, which is critical to learning a foreign language. During the essay writing task, students recycled the vocabulary and structures previously learned during the process of composing, ideas, reading, and responding to the peers (Lee, 2005).

**Social constructivist perspective**

The social constructivist perspective has been found effective in the teaching of writing. For example, Needles and Knapp (1995) compared the success of three approaches—skills-based, whole language, and the social constructivist perspective—in the teaching of writing. Of the three, the social constructivist perspective led to the most substantial improvement in students’ writing abilities. The successful social constructivist approach used six principles: (1) component skills are best learned in the context of the writing task, (2) the quality of writing increases when students write what is meaningful and authentic, (3) fluency and competence are influenced by the extent to which the task connects with the student’s background and experience, (4) involvement increases when students are encouraged to interact while performing writing tasks, (5) students’ develop competence if they approach the task as a problem solving process, and (6) students need ample opportunities to write extended text. These six principles of the social constructivist
perspectives in writing instructions introduced in Needles and Knapp (1995) guided my design of the essay writing task.

Furthermore, social constructivism may be able to provide meaningful learning for all students, especially for those who are linguistically and cultural diverse students. Moll (1992) made an argument along those lines:

[I]n studying human beings dynamically, within their social circumstances, in their full complexity, we gain a more completed and … a much more valid understanding of them. We also gain, particularly in the case of minority children, a more positive view of their capabilities and how our pedagogy often constrains, and just as often distorts, what they do and what they are capable of doing. (p. 239)

In this class, learners in the three groups were all minority students in some sense. So, a socio-constructivist approach should help us gain insights into our understanding of the heterogeneous learners’ motivation, beliefs, identity development associated with language learning and their knowledge and experiences with Chinese language and culture.

**Concept of class community**

The design of the writing task was also supported by the concept of classroom community. In recent years, educators’ efforts to stimulate the sense of community in virtual classrooms, especially in Internet-based asynchronous learning networks, have been closely related to their perception of the value of the social bonds in the learning process (Rovai, 2001). To fully understand sense of community in education, Reingold (1991) and Hill (1996) called for extensive research in a variety of contexts. In the past, language educators tended to ignore community formation in language learning classrooms. However, recent studies in the field of second language learning pointed to the value of the collaborative community space that communication technologies provided to native and non-native speakers whom can reciprocally scaffold linguistic, cultural, and content knowledge (Potts,
For example, Potts (2005) studied the formation of community and suggested that "the impact of pedagogical design on the development of community within online spaces, particularly a community that affords second language (L2) learner interaction and shared knowledge construction necessary for continued language development, is of vital interest to L2 learners" (p. 139).

Indeed, Opp-Bechman and Kleffer (2004) remarked that online learning necessarily incorporates community building. The online community space assists native and non-native speakers in overcoming well-documented challenges encountered in traditional classrooms (Leki, 2001; Morita, 2000, 2004, as cited in Potts, 2005) because language learning is social interaction (Canale & Swain, 1980; Fillmore, 1979) and community building (Browne and Gerrity, 2004). Furthermore, writing can be effective in creating communities. For example, Warschauer (1996) found that students were more inclined to pursue idea-generation discourses and were less inhibited during written production than in oral conversations. In foreign language classes, writing can be effective in developing community, especially when students feel comfortable and confident writing about their ideas and experiences. As Bräuer (1997) suggested, in foreign language writing, the focus should be on writing as a communication of ideas that matter to the writers and their audiences. We instructors are usually not able to predict the learners' future foreign language writing needs; thus, the students should be exposed to a wide range of writing experiences. As Bräuer asserted, "these kinds of writing can serve as motivating forces in the foreign language classroom, bring about a sense of community, encourage interactive experience with culture, and mediate listening, speaking, and reading" (cited in Reichet 1999, p. 189). Similar comments have come from Cutler (1996):“the more one discloses personal information, the more others
will reciprocate, and the more individuals know about each other, the more likely they are to establish trust, seek support, and thus find satisfaction” (p. 362). The literature on community also shed light on problem solving through essay writing in Chinese 202.

As one of the major pedagogical purposes of this essay writing task was to create a learning community in the class, the consideration for the concept of class community was very important in the design of the essay writing task.

**Description of the essay writing task**

**The essay writing topics**

In this class, students were required to write five essays on different topics. The topics were all related to the content covered in the textbook, Integrated Chinese (Level II), and were about their real-life experiences. In the class featured in this study, in addition to developing students’ writing skills and expanding the students’ writing experiences, the assigned and self-chosen writing topics were expected to help develop a positive and supportive classroom community. In the whole semester, i.e. spring, 2005, students wrote essays on the following topics:

- My winter break (in-class writing task)
- Zhang Tianming’s College Life (summary of the texts in Lesson 1 to Lesson 4 in the Integrated Chinese II textbook)
- My group members’ college/high school life (first, an in-class group conversation on the topic, then a writing task)
- My college/high school life
- Celebrating Chinese New Year (Spring Festival) in the United States
Other self-chosen topics

In the following section, screen shots of the WebCT discussion boards demonstrate how the essay writing task worked in this Chinese language class. Parts of the students’ names and their school names were erased to protect their identities as required in the Human Subject Research Consent Form.

Figure 1 illustrates the discussion board of “Writing exercises” and the five threads of messages containing the compositions on the above-mentioned topics.

Figure 1: A screenshot of the “Writing exercises” forum in WebCT discussion board

Figure 2 demonstrates specifically the essay drafts on the topic “My High School or College Life.”
Figure 2: A screenshot of the essays on the topic “My High School/College Life” in WebCT discussion board

Figure 3 shows an example of a peer-corrected and reviewed draft of an essay.

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文章编号: 1964 [回复: 第1962]
作者: L
日期: 2005年3月7日, 星期一, 00:40

我现在高中生活是非常忙。可是，我的课很多。我现在是高中九年级，在一个高
校读书。高中生活比初中难。我对我在学校学的东西很感兴趣，也很好玩。
所以我都不觉得无聊。我很喜欢画画和写英文文章。高中的环境比较自由，但是我们的功课和考试
都比较多。再说，我也参加很多课外的活动。所以，我就不好意思经常没办法来上中文课。

修改的文章:
我在一个高校高中九年级，虽然我的高中生活很忙。但是我好像学得很好。高
中的生活比较自由，但是我的功课和考试相比之下会比较多。虽然高中生活比初中生活要辛苦，
但是我对在学校的活动很感兴趣，都不觉得无聊。我很喜欢画画和写英文文章，我也参加很多课外
的活动。所以，我就不好意思经常没办法来上中文课。

注意的事宜:
1. 作文的语言还不错。但在作文结构方面需多加努力。不要有还有的东西不要有下一段。然后又回
到刚才还没有说完的句子。
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Figure 3: A screen shot of a peer-reviewed and revised draft of a Chinese
essay titled “My High School Life”

Figure 4 illustrates the four collaborative groups in WebCT discussion board.

<table>
<thead>
<tr>
<th>Writing exercises</th>
<th>2</th>
<th>125</th>
</tr>
</thead>
<tbody>
<tr>
<td>作文互评第一组: 李,王,王,张</td>
<td>0</td>
<td>60</td>
</tr>
<tr>
<td>作文互评第二组: 唐,张,朴,杨</td>
<td>0</td>
<td>35</td>
</tr>
<tr>
<td>作文互评第三组: 陈,张,陆,林</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td>作文互评第四组: 苏,黄,马</td>
<td>0</td>
<td>26</td>
</tr>
</tbody>
</table>

Figure 4: A screenshot of the four collaborative groups in WebCT discussion board

Notes: In Figure 4, parts of the students’ names were erased to protect their identities. The first number indicates only 2 messages were unread, the second number is about the total messages submitted and subtotals of each writing group).

Stages of the writing task

In his literature review on the use of computers in the assistance of writing instruction, Reed (1996) suggested a three-stage model; that is, good writers usually break the writing task into three discrete stages: prewriting, drafting, and revising. However, in this Chinese essay writing task, no discrete stage of prewriting was planned for students because research literature suggests that computer writers typically adopt a jump-right-in approach to the writing with limited, often informal, planning (Pennington, 2004). In most cases, computer writers do most of their planning and decision making when they are writing, either in their first language (L1) (Haas, 1989) or in L2 (Akyel & Kamisli, 1999; Li & Cumming, 2001) (as cited in Pennington, 2004).

Guided by the social constructivist perspective on writing instruction, the students were encouraged to write about their real-life experiences and topics they learned about from their textbooks. What deserves mention is that although there was no explicit pre-writing stage of this writing task, some other tasks and activities, such as writing and talking about linguistic biographies, self-introductions, and celebrating Chinese New Year, etc. were
happening in online chats and other class discussions either online or face-to-face. All these virtual or face-to-face discussion served as prewriting activities.

The drafting stage of the task took place in January and February 2005 when students wrote and posted drafts of at least five their essays to the WebCT discussion board. A non-heritage learner only wrote three essays possibly because of his relatively low Chinese proficiency. One Chinese American high school freshman heritage learner wrote six essays. The revising stage of the essay took place in March, April, and early May 2005 when students reviewed each other’s essays and revised drafts of essays in four groups with four students in each group. Every group had its own discussion board in WebCT. By May 10, 2005, each student chose a revised essay to submit electronically to a Chinese magazine published by a U.S. Midwestern university for learners of Chinese across the country. Four of the essays were published in the 2006 spring issue of the magazine.

**Findings**

The research findings reveal evidence that a learning community was formed in the class through students’ interaction, and their essays and topics, and that essay writing seems to be an effective way in tapping into the learners’ existing knowledge. The Spearman Rho test results indicated a significant positive correlation between the lengths of the students’ essays and their test scores which suggested that essay writing could be instrumental in the Chinese language learner’s acquisition of the target language. Followed are discussions about the major themes of the findings of the study.

**Evidence of a community**

As Potts (2005) stated, “If community cannot be assumed by the provision of an ICT-mediated space, then it is incumbent on researchers to provide evidence of its existence”
As introduced previously, an important pedagogical purpose of the essay writing task was to develop a positive learning community in this class consisting of students from diverse educational and cultural backgrounds and with diverse proficiency levels. To assess whether the term “community” can be applied to the students’ essay writing in WebCT discussion board in this class, considerations have been given to the draft and review messages students posted to the discussion board and the topics students wrote essays on.

**Students’ interaction**

Table 2: Number of essay writing messages posted in WebCT discussion board (including all drafts and reviews)

<table>
<thead>
<tr>
<th></th>
<th>Students’ posts</th>
<th>Instructor’s posts</th>
<th>Total posts</th>
<th>Mean of students’ posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese 202 (N=16)</td>
<td>243 (86.8%)</td>
<td>37 (13.2%)</td>
<td>280 (100%)</td>
<td>15.2</td>
</tr>
</tbody>
</table>

Table 3: Number of essay writing messages posted by learner groups

<table>
<thead>
<tr>
<th></th>
<th>Drafts</th>
<th>Reviews</th>
<th>Instructor’s messages</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CAHL</td>
<td>Non-HL</td>
<td>I-HL</td>
<td></td>
</tr>
<tr>
<td>CAHL</td>
<td>56</td>
<td>47</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>Reviews</td>
<td>CAHL</td>
<td>Non-HL</td>
<td>I-HL</td>
<td></td>
</tr>
<tr>
<td>CAHL</td>
<td>19</td>
<td>17</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal:159 (56.8%)</td>
<td>Subtotal: 84 (30%)</td>
<td>37 (13.2 %)</td>
<td>280</td>
</tr>
</tbody>
</table>

Notes: (1) CAHL=Chinese American Heritage Learner
(2) IHL=International Heritage Learner
(3) NHL=Non-heritage learner

Although the number of the messages of the drafts and reviews students posted may not tell whether the students provided each other helpful comments, a survey on a 6-point Likert-scale, two items related to the usefulness of the peer reviews gained an average above 4.5 out of 6 seem to provide positive evidence:

“I have followed the revision suggestions made by my group members” (4.6 out of 6)
“My group members’ comments on my essays are helpful in my revisions” (4.6 out of 6)
To further illustrate how helpful the students were to each other when making comments on the essays and how friendly they were when interacting with each other, some examples of students’ friendly and encouraging essay reviews as follows provide evidence of a supportive and friendly learning community.

Comment 1

“Wow, I didn’t know that you can write such a good essay :) Well, basically it's already pretty good. Based on the essay, I can feel how your life is. Do you mind adding more information on what have you have done in Mexico? What did you sing? How many days? Did your parents go with you? Who were with you?”

(Posted in English on April 21, 2005, an international heritage learner’s comment on an essay written by a high school freshman heritage learner about a music performance trip)

In the above comment, the reviewer indicated that he could feel the writer’s life experiences in her performing trip and mentioned his further interest in learning more details.

A college non-heritage learner made the following comment full of encouragement and constructive suggestions to a high school heritage learner:

Comment 2

“…You should also perhaps make an introduction saying that you are in high school and why you are taking this college class. I think this is a good start for the essay, but it needs a little more elaboration and organization. Grammatically (although my grammar is not much better!) I did notice a couple of things… Overall, I think an outline and more developed ideas will greatly enhance this essay. It’s a good start and I am looking forward to seeing the next revision!

(Posted in English on April 15 by an American college non-heritage learner to an essay draft written by a high school freshman heritage learner about his experiences in learning Chinese)

As indicated in Table 3, students posted a total of 84 reviews on each other’s essay drafts. International heritage learners posted the most reviews (48). Instead of intimidating the lower-level students, heritage learners were able to provide assistance, as expert learners,
to their peers of lower proficiency levels. The international language learners provided the American-Chinese heritage learners and foreign language learners of Chinese with knowledge of sub-Chinese cultures in Hong Kong and Malaysia and told their classmates about their perceptions of differences between eastern and western cultures. The international heritage learners proved to be valuable members in the community. This finding challenges the traditional practices of ignoring the social and cultural values international learners may bring to the class and excluding international heritage learners in the foreign language classroom because of their relatively higher language proficiency.

**Students’ essays and essay topics**

The students’ trust, support, and satisfaction with each other were also revealed in the essays they wrote. Due to space limitation, the researcher is not able to cite many paragraphs of students’ essays, but here she will list some of their essay topics. Students’ self-chosen topics are strong evidence of the comfort and trust students developed in this community as they were writing about their personal lives, family, and cultural values they experienced and perceived. The following table provides a list of students’ self-chosen topics.
Table 4: Students’ self-chosen essay topics

<table>
<thead>
<tr>
<th>Title and topic</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>人民币和美元 (Chinese Yuan and American Dollars)</td>
<td>A Chinese American high school freshman heritage learner</td>
</tr>
<tr>
<td>蓝色比红色好 (The color of blue is better than the color of red)</td>
<td>A Chinese American high school freshman heritage learner</td>
</tr>
<tr>
<td>春节的意义 (The meaning of Chinese Spring Festival to me in the United States)</td>
<td>An international college heritage learner</td>
</tr>
<tr>
<td>夏日愿望 (My summer wishes)</td>
<td>An international college heritage learner</td>
</tr>
<tr>
<td>东西方人对家的看法 (Comparing oriental people’s and westerners’ perceptions of family)</td>
<td>An international college heritage learner</td>
</tr>
<tr>
<td>我的相架 (My photo frame)</td>
<td>An international college heritage learner</td>
</tr>
<tr>
<td>我爱我家 (I love my family)</td>
<td>An international college heritage learner</td>
</tr>
<tr>
<td>我的中国之行 (My adventures in China)</td>
<td>A non-heritage college learner</td>
</tr>
</tbody>
</table>

Students’ essays on self-chosen topics and given topics revealed the students’ identities, that is, American-born Chinese, international Chinese students in the United States, and American students, their perceptions of cultural differences (such as in celebrating New Year and family), and their knowledge and interest in Chinese culture. In many of the international heritage learners’ essays, they expressed their homesickness and their frustrations and happiness in pursuing studies abroad. The American-born Chinese heritage learners, both those in college and in high school, tended to explore their knowledge about China and Chinese culture in their essays. Therefore, the essay-writing task provided opportunities for the learners to learn about each other’s identities, experiences, and thoughts.

As Table 4 indicates, only heritage learners wrote on self-chosen topics, which may be explained by their relatively higher proficiency level, their richer experiences with and increased exposure to Chinese culture, and their stronger motivation to write or greater
interest in writing about their real-life experiences. The friendly and supportive community provided them the comfort and trust and their writing contributed to the development of such a community. At the same time, the essay writing task also gave students’ opportunities to share and to help construct their knowledge about Chinese language and culture, as revealed in their essays. Following are excerpts from a high school Chinese American freshman girl’s essay titled “Celebrating Chinese New Year in the United States” (draft posted on April 16, 2005, errors not corrected):

“我是在美国出生长大的,但是我的父母是从台湾移民来美国的,在我的记忆中,家里好象从来没庆祝过春节,所以我对新年的习俗一概不通,甚至不知道春节是什么时候呢!”.

“今年我的春节比较特别一些,因为我在XX大学进修中文,中文系举办了春节晚会活动,老师要同学门上台表演唱歌和朗诵诗歌,除此之外,我还在十二生肖小品话剧里担任猫的角色,并且朗读有关春节的短文,真是又新鲜又有趣.”

“今年的春节我学了很多东西,比如说中国人过年喜欢穿红色的衣服,因为红色象征吉祥;春节大扫除,是为了送旧迎新;连团员饭吃的菜都有特别的名称和意义,譬如说,“鱼”是年年有余,真有意思!”

(Translation: I was born and grew up in the United States. But my parents immigrated from Taiwan to the United States. In my memory, my family seems to have never celebrated Chinese New Year, so I had no idea of any customs or practices of Chinese New Year, I even did not know when was the Chinese New Year’s Day.

This year, my Chinese New Year was a little special, because I have been taking Chinese at the University. The Chinese program hosted a Chinese New Year Celebration party. The teacher encouraged the students to perform singing and poem reciting on the stage. In addition to those activities, I also played a role of the cat in a skit of 12 zodiac, and read a short essay on Chinese New Year. It was really fresh and interesting
This year’s Chinese New Year I have learned a lot. For example, Chinese like to wear red on New Year’s Day, because red symbolizes lucky and prosperity. The new year’s big house cleaning, is to get rid of old and to welcome new. Even the dishes of the family-gathering dinner on New Year’s even are special and meaningful, for example, ‘fish” is “year” very. How interesting they are!

Because of the Chinese New Year celebration party students had before writing this assigned essay on the topic “Celebrating Chinese New Year in the U.S.,” the students’ excitement, happiness, homesickness revealed in their essays. The above excepts of the essay is an example. Therefore, writing about real-life experiences also gave students opportunities to share and construct knowledge. As revealed in the example above, the writing task also seemed to be helpful to both heritage and non-heritage learners with their identity development as they wrote about and reflected on their Chinese culture experiences.

**Tapping into language learners’ existing knowledge**

As discussed in the previous section, heritage learners tended to write longer essays and to choose their own topics, and the essay writing task might be helpful to the students’ identity as well as literacy development. Another finding that emerged in the data analysis is that essay writing may help tap into students’ existing knowledge. The following table provides information about the length of each group of students’ essays.

<table>
<thead>
<tr>
<th>Group</th>
<th>Average total length of all essays</th>
<th>Average length of each essay</th>
<th>Average length of the final essay submitted to the magazine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-heritage learners</td>
<td>736 characters</td>
<td>190 characters</td>
<td>449 characters</td>
</tr>
<tr>
<td>Chinese American heritage learners</td>
<td>761 characters</td>
<td>229 characters</td>
<td>558 characters</td>
</tr>
<tr>
<td>International heritage learners</td>
<td>1817 characters</td>
<td>416 characters</td>
<td>883 characters</td>
</tr>
</tbody>
</table>
Table 5 reveals that international learners wrote the longest essays, which was not surprising because they possessed the highest writing proficiency level based on their self-assessment against the ACTFL guidelines. Among the five Chinese American heritage learners who met Valdés’s (2001) definition of a heritage learner, four high school freshmen heritage learners started Chinese 201 with a very low proficiency level: they recognized 77, 48, 44, 14 characters respectively. But at the end of Chinese 202, these four heritage learners demonstrated great progress in learning Chinese, as assessed by an online reading test and their performance on the essay writing task. Overall, the length of their essays were not shorter than the non-heritage learners who took Chinese 101 and Chinese 102 or equivalents before starting Chinese 201. A reasonable conclusion may be made that computer-assisted essay writing about learners’ real-life experiences contributed to heritage learners’ great progress in Chinese reading and writing skills.

Foreign language and heritage learners do not begin the writing in their target language “at ground zero,” as Valdés et al. (1992) argued. In their study of students at different proficiency levels writing in Spanish at an American university, Valdés et al. (1992) argued that students built their foreign language writing “directly on the abilities they had acquired for writing in English” (p. 346); that is, these students transferred their organizational skills, discourse strategies, and writing conventions from their L1 (English) into their FL (Spanish).

This essay writing task seemed to be especially effective for heritage learners. Essays on real-life experiences and self-chosen topics gave heritage learners the comfortable outlets to share their knowledge, experiences, and identities. Ausubel (1978) stated that “the most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly” (p. 94). In the field of heritage language education, educators and
researchers are aware of the differences between heritage learners and non-heritage learners in language classrooms, but few research efforts and instructional practices have been identified to tap into the heritage learners’ linguistic and cultural repertories and to help further develop their knowledge and identities. The findings of this study suggest that essay writing about students’ real-life experiences and on self-chosen topics may be a good strategy to develop students’ much needed literacy, tap into their existing knowledge of Chinese language and culture, and help further their construction of knowledge and identity.

International heritage learners of Chinese are usually excluded in the language classroom and ignored in research literature. But in this study, international heritage learners’ Chinese essays and their role in the peer-review suggest that these learners definitely deserve our attention because their perceptions about American and Chinese culture could be valuable to their American peers. As Donato (2000) stated, “learners bring to interactions their own personal histories replete with values, assumptions, beliefs, rights, duties, and obligations” (p. 46). This essay writing task was a good example of inviting heritage and non-heritage learners to share and construct their knowledge about Chinese culture and personal histories with different values and beliefs, etc.

**Effectiveness of the writing task on Chinese language acquisition**

Research reveals that writing is the only way to learn writing, and that quantity often equals quality in writing development (see Horning, 1987; Shaughnessy, 1977), although “prolific writing is not the objective of writing instruction” (Braine, 2004, p. 100). In this study, although the length of a writing assignment is usually not considered the key indicator of a language learners’ writing ability, the length of heritage learners’ assignments is valid evidence of their learning progress because heritage learners have already mastered other
common evaluation criteria, including grammar and vocabulary. In these process-oriented essay writing tasks, the non-heritage learners received comments and corrective feedback from advanced peers—heritage learners. Therefore, the final drafts of their essays contained fewer errors than a usual essay. In sum, examining correlation between the lengths of the essays and their test scores in this study should be appropriate.

Considering the small sample size, a nonparametric test—Spearman Rho test— was used to test the relationship between the length of the essays and the test scores in order to examine the effectiveness of the writing task on Chinese language acquisition.

Table 6: Number of tests in Chinese 202

<table>
<thead>
<tr>
<th>Quizzes &amp; Exams (achievement based)</th>
<th>Listening tests (proficiency-based)</th>
<th>Online reading test (proficiency-based)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese 202</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>

The quizzes and exams were designed to assess the students’ mastery of the knowledge covered in the classes. The testing formats included multiple choice questions, translation, and sentence completion, etc. The listening tests were published HSK (Hànyǔ Shūpíng Kāoshì, Romanized Chinese sound Pinyin symbols for “Chinese Language Proficiency Test”) simulated tests. HSK is a standardized test designed and developed by the HSK Center of Beijing Language and Culture University to assess the Chinese language proficiency of non-native speakers, including foreigners, overseas Chinese, and students from Chinese national minorities. The online reading test was an already widely-tested pilot test developed and administered by the national foreign language resource center at the University of Oregon. These proficiency tests were not dependent on particular class content, course materials, or language software programs. As any language proficiency test, these tests were intended to measure learners’ overall command of a language.
Table 7: Test results of Spearman’s Rho correlation between lengths of the essays and the test scores

<table>
<thead>
<tr>
<th>Chinese 202 (N=16)</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>.716 **</td>
<td></td>
</tr>
</tbody>
</table>

**Correlation is significant (p < 0.01, 2-tailed)

The result reveals a significant correlation (r=.716, p < 0.01) between Chinese essay length and test scores. A conclusion could be drawn that the longer the Chinese essays the students wrote, the higher their test scores were.

**Reflections on implementation and pedagogical issues**

This task was mostly completed online in the WebCT discussion board, about three 50-minute-long face-to-face class periods were devoted to the review and revision work of the task, in addition to time outside of class. The face-to-face interaction in class provided the immediate feedback and a comfort zone frustrated students might need, as illustrated in the following comment: “Face-to-face makes asking questions and making revisions a lot faster and more efficient, instead of having to wait for responses.”

Furthermore, although the researcher/designer/instructor used a learner-centered design for this class and this CALL activity, she found that students were still expecting more authority and help from their teacher. As one student commented on the item about the role of the instructor in the task in the survey, “while having the advanced learners correct [the essays] is good, they still make mistakes, or use sentence structures and vocabulary that we don't know. Having the teacher look them over would help reinforce vocabulary and grammar that we have learned.” This comment illustrated two important issues. First, the instructor should play a more active role in the writing task. Second, teachers should provide more immediate and authoritative error correction feedback. Because error correction and
grammar instruction is an important issue in second language acquisition and language education, these areas definitely deserve more and deeper investigation in future classroom teaching and research.

The researcher’s observation of the implementation of this essay writing task in a real class was consistent with research findings on both the active role of students involved in the writing task and the important role of teachers in assisting second language learners with the use of computers in the writing process. Some studies investigating computer networks used in L1 and L2 classes pointed to the results that these networks encourage more written discourse and, therefore, more involvement on the part of the learner (Bump, 1990; DiMatteo, 1990; Kelm, 1992). On the other hand, as Phinney (1988) noted, if no specific instruction was given to the students in using the computer to facilitate the writing process, from prewriting to revision, the computer alone appeared to have little effect in changing the writing behavior of naive writing. Phinney (1991) also emphasized the teacher’s role in writing activities during regular class time, which stressed brainstorming, draft exercises, peer commenting, and revising of drafts.

Last, the instructor did not use a writing rubric and peer review guide at the beginning of the reviewing stage. During that time, the students’ reviews were almost exclusively grammar corrections provided by advanced learners to lower-level learners. The interactions between students of different proficiency levels were few. This problem was probably due to the instructor’s then limited previous experiences in teaching Chinese writing and the fact that there has been a lack of Chinese writing rubrics and peer review guides available. But later on, the instructor provided a writing rubric and review guide (see appendixes A and B). Then, the students made more comments on global issues, such as organization and
transition, on each other’s essays, which improved both the quality of the essays and the support in the community.

**Discussions and implications for classroom instruction and research**

This present study provides evidence of the beneficial aspects of asynchronous CMC to Chinese language acquisition and online community formation. Furthermore, the study highlights CMC’s affordances to heterogeneous learners in the Chinese language classroom. This action research project also yielded some implications on classroom instruction and future research.

The research findings of this study are strongly related to the notion of the importance of peers in the educational process, and that “learning to be” is considered an integral part of university life (Brown & Duguid, 2002, p. 221). In a language classroom mixed with learners of diverse linguistic proficiency levels, cultural knowledge, and experiences, a friendly and supportive classroom community is crucial and beneficial in providing opportunities to develop learners’ linguistic competence and identity. From the second language acquisition (SLA) perspective, language learners may be good sources of modified input for one another (Smith, 2004, p. 24). From the social constructivist and sociocultural perspectives, the learners could be scaffolds to each other. The rich interaction students had in the peer review proved that learners at different proficiency levels could be good learning partners to each other in terms of providing modified input and cultural knowledge. The formation of the learning community also illustrated the importance of peer interaction and assistance. Recent years have seen a growing interest in understanding how language development occurs in non-lab instructional settings. This action research was aligned with the trend in the field by researching the language learning in a real classroom. Ohta (200) argued that to gain a better
understanding of the role of interaction in L2 development, more and more researchers have started to study how native speakers or more proficient “expert” support “novices” and how L2 learners collaborate with each other when they work on tasks in L2 classrooms. She called for more research on the nature of the effective assistance in peer learning situations.

This study also provides evidence supporting the role of interaction among Chinese learners at different proficiency levels and with diverse cultural backgrounds in completing an essay writing task. As the study reveals, if collaborative learning activities are well-designed, the mix of heterogeneous learners in the same classroom may not necessarily be a disadvantage in the instruction; rather, the diversity can enhance the dynamics of the classroom interaction and provide rich language and cultural learning resources.

In addition, as introduced previously, an English rubric and review guide were used in the essay writing task, but the students were expecting rubrics and guides specifically for Chinese essays. For example, one student expressed her/his disappointment, “(the writing rubric and peer review guide) seemed mostly for English essays.” Although at this point I cannot comment on how much influence a writing rubric and peer review guide written in English might have on the students’ Chinese essay writing tasks, I do believe a writing rubric and peer review guide in Chinese would provide authenticity and an example of formal academic Chinese writing genres. Furthermore, the rubric and review guide would be strong scaffolding to the students and, therefore, help the students’ acquisition of advanced vocabulary and formal grammar leading them to higher proficiency level in Chinese. Last, there has been rich research literature on how much the Chinese English as a foreign/second language (EFL/ESL) learners’ writing has been influenced by their native Chinese language’s rhetorical strategies. However, little investigation has been conducted in the
opposite direction: how English native speakers’ Chinese as a second/foreign language writing has been influenced by their English writing. Further research may be called for to address these issues.

In this study, the students’ proficiency levels varied significantly. Future classroom instruction and research should address the issue of proficiency level in foreign language writing.

Further, as Thorson (2000) pointed out, in addition to language proficiency and language use in planning and composing, discourse mode is one of other factors that play a role in the quality of the L2 writing. In this present study, no specific modes were required. Except for one argumentative essay, all the other essays were narration and description, which could result from the fact that students were encouraged to write about their real-life experiences. Further classroom instruction and research should look into more discourse modes and the complicated process involved in the students’ writing of other genres.

Lastly, the WebCT discussion board proves to be effective in supporting the essay writing task. This study reveals evidence of many affordances learning management systems (LMS) like WebCT can provide for language teachers and learners. The learners did peer review and revising in the discussion board. But the online chat activities and reflections done in WebCT also contributed to the accomplishment of their essay writing. The findings lent support to the argument that Felix (2003) made, that is,, learning management systems like WebCT enable teachers to adopt a holistic approach which may shed light on systematic integration of educational technology into the language curriculum. The affordances of WebCT are also explored in the other chapters in this dissertation. All these chapters reveal the power of WebCT in supporting in online language learning.
Limitations of the study

A major weakness of the study is also its strength: research in a real classroom. The research need sometimes had to yield to the instructional needs. Not much in-class time was devoted to the essay writing task because of other learning tasks and activities. Some lower level students were not able to write all five essays as required which affect the amount of data for analysis. Because of the small sample size, the results of the quantitative data analysis could not be generalized. Further, because of students’ diverse ages, educational backgrounds, and cultural experiences, it might not be appropriate to use the lengths of the essays as an indicator of their learning outcomes. Further research should address these limitations.

Conclusion

This article reported on a case study in a real classroom on a Chinese essay-writing task in a Chinese WebCT discussion board. Research findings suggest that this writing task was effective and instrumentally useful in developing students’ writing skills in Chinese and overall Chinese language acquisition. Furthermore, the writing task contributed to the development of a friendly and supportive learning community in the class. In the essay drafts, the students used the characters and sentence structures they learned in the texts and, further, used new characters and structures in their essays. In fact, students moved beyond the instructor’s original goal of developing descriptive and narrative text writing skills by reading and writing Chinese argumentative essays, critiques, and reviews in Chinese. Therefore, the students became familiar with the other text types of written discourse: evaluation, explanation, and argument.
In addition, the use of technology in the writing task was successful and crucial. Typing Chinese on the computer made writing much easier to the students. As stated previously, handwriting Chinese character has been considered the biggest hindrance to Chinese language learners and prevents many Chinese language learners from moving beyond introductory learning (Xu & Jen, 2005). But this Chinese writing task successfully engaged the students in writing Chinese essays and reviews. The quality and quantity of the students’ essays were impressive. Furthermore, the WebCT asynchronous discussion board provided time- and place-dependent convenience and flexibility to the learners and helped create a supportive and friendly learning community in the class.

Although this study has not specifically addressed the issue of whether it is appropriate to let students use computers to write Chinese characters in a second-year class, this study has indeed presented exciting and promising findings pointing to the great advantages computer-assisted language learning and the online learning environment provided to the Chinese language learners. Many researchers believe that online learning environments and computer-mediated communication hold great promises in innovating teaching and learning and significantly enhancing the learning outcomes. However, careful implementation steps and serious research should be done to evaluate the appropriateness of the tasks and to ensure positive learning experiences and outcomes.

By reviewing more recent research on the use of electronic media in second language writing, Pennington (2004) called for teachers’ attention by stating that L2 and foreign language teachers should engage with the new media and integrate word processing, networking, hypermedia, and the Internet into the language curriculum and pedagogy. This
study answered and supported the call for more use of technology in language curriculum, especially less commonly taught languages like Chinese.

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APPENDIX A: WRITING RUBRICS

http://www.really-fine.com/Writing-Rubrics.html

5

Accomplished Writing
- Focused on topic
- Logical progression of ideas
- Sentence structure varied
- Mature understanding of writing conventions
- Specific details

4

Proficient Writing
- Focused on topic and includes few, if any, loosely related ideas
- Transitional devices strengthen organization
- Occasional errors; word choice is adequate
- Commonplace understanding of writing conventions
- Some specific details; support is loosely developed

3

Basic Writing
- Focused but may contain ideas that are loosely connected to the topic
- Lacks logical progression of ideas
- General conventions are used
- Partial, limited understanding of writing conventions
- Development of support is uneven

2

Limited Writing
- Addresses topic but may lose focus by including loosely related topics
- Includes a beginning, middle, and end, but these elements may be brief
- Errors in basic conventions, but common words are spelled correctly
- Definite misunderstanding of writing conventions
- Development of support is erratic and nonspecific
Poor Writing
- Addresses topic but may focus by including loosely related ideas
- Has an organizational pattern but may lack completeness or closure
- Frequent and blatant errors in basic conventions; commonly used words may be misspelled
- Obvious misunderstanding of writing conventions
- Little if any development of the supporting ideas; support may consist of generalizations or fragmentary lists
APPENDIX B: CHINESE 202 ESSAY WRITING PEER REVIEW INSTRUCTION

1. How to Ask for and Receive Feedback on Your Writing
http://www.unc.edu/depts/wcweb/handouts/feedback.html

2. Peer Review Guidelines for the Narrative Essay (modified from
http://glory.gc.maricopa.edu/~mdesoto/eng101/assignment3peerreview.htm)

Directions:

1. You will work in groups of three, or four, each person reading and providing feedback on the other people’s essays.

2. Read the your group members’ online drafts.

3. Each group member should read the group members’ drafts. First, read the essay completely without stopping.

4. Write a review of your classmate's essay. Use the Peer Review Form below as a guide to provide feedback for your classmates. You can copy the categories below into your review, or simply print the form and use it as a guide to remind you to address each of the categories in your review.

5. The peer review form is based on the rubric I will use to grade the essay. Please concentrate on the most important ways the draft could be improved. Be specific in your responses, explaining what you don't understand, and in your suggestions for revision. And, as much as you can, explain why you're making particular suggestions. Try describing what you see or hear in the paper—what you see as the main point, what you see as the organizational pattern. Identify what's missing, what needs to be explained more fully. Also identify what can be cut. Be honest, but polite and constructive, in your response. The Peer Review Form is brief and to the point, so feel free to elaborate on areas that might help your classmates create a better essay.

<table>
<thead>
<tr>
<th></th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTRODUCTION</strong></td>
<td>Well-developed introduction engages the reader and creates interest. Contains detailed background information. Thesis is clear</td>
<td>Introduction creates interest. Thesis clearly states the position. Conclusion effectively summarizes topics.</td>
<td>Introduction adequately explains the background, but may lack detail. Thesis states the position. Conclusion is recognizable</td>
<td>Background details are a random collection of information, unclear, or not related to the topic. Thesis is vague or</td>
</tr>
<tr>
<td><strong>BACKGROUND/History</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Thesis Statement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CONCLUSION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and focused. Conclusion effectively wraps up and goes beyond restating the thesis.</td>
<td>and ties up almost all loose ends.</td>
<td>unclear. Conclusion does not summarize main points.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Is the last sentence a summarizing topic sentence? Does it include the lesson learned and refer to the narrated incident? Does the introductory paragraph define an ethical idea or term adequately?

SUGGESTIONS:

| MAIN POINTS | Well developed main points explain the thesis. Supporting examples are concrete and detailed. The narrative is developed with a consistent and effective point-of-view, showing the story in detail. | Three or more main points are related to the thesis, but one may lack details. The narrative shows events from the author's point of view using some details. | Three or more main points are present. The narrative shows the events, but may lack details. | Less than three main points, and/or poor development of ideas. The narrative is undeveloped, and tells rather than shows, the story. |

Is there a discussion of who or what influenced the writer's ethical development? Does the narrative fully explain the incident from the writer's point of view? Does the narrative show, not tell, the story as it unfolds?

SUGGESTIONS:

| ORGANIZATION | Logical progression of ideas with a clear structure that enhances the thesis. Transitions are skillfully used to move from one idea to the next. | Logical progression of ideas. Transitions are present equally throughout essay. | Organization is clear. Transitions are present. | No discernable organization. Transitions are not present. |

Does the narrative use a consistent chronological progression?
Can you identify transitions between ideas within the paragraphs?
**SUGGESTIONS:**

<table>
<thead>
<tr>
<th>STYLE</th>
<th>Writing is smooth, skillful, coherent. Sentences are strong and expressive with varied structure. Diction is consistent and words well chosen.</th>
<th>Writing is clear and sentences have varied structure. Diction is consistent.</th>
<th>Writing is clear, but sentences may lack variety. Diction is appropriate.</th>
<th>Writing is confusing, hard to follow. Contains fragments and/or run-on sentences. Inappropriate diction.</th>
</tr>
</thead>
</table>

Is there variety in sentence structures? Does the writing flow smoothly and clearly? Is the word choice appropriate? Highlight any slang or colloquialisms.
**SUGGESTIONS:**

<table>
<thead>
<tr>
<th>MECHANICS</th>
<th>Punctuation, spelling, capitalization are correct. No errors.</th>
<th>Punctuation, spelling, capitalization are generally correct, with few errors. (1-2)</th>
<th>A few errors in punctuation, spelling, capitalization. (3-4)</th>
<th>Distracting errors in punctuation, spelling, capitalization.</th>
</tr>
</thead>
</table>

Are there spelling, punctuation and capitalization errors that distract?
**SUGGESTIONS:**
CHAPTER FIVE
CONCLUSION

This dissertation has described the design, implementation, and evaluation of the use of Chinese WebCT in college-level Chinese language courses offered to both heritage and non-heritage learners over a period of nine months. Little research literature exists on the use of technology in Chinese language teaching and learning and its impact on classroom practices. This dissertation aims to fill the void by researching a variety of WebCT tools, learning tasks, diverse learner types, and pedagogical approaches from different theoretical perspectives and using different research methods. The major goal of the research was to investigate the diverse learners’, especially heritage learners’, learning needs to identify well-grounded pedagogical innovations and desired learning outcomes in technology-integrated language classrooms. Grounded in multiple theories, this dissertation research dealt with many dimensions of language learning. Kramsch, A’Ness, and Lam (2000) remarked that the “use of computers in multimedia environments (including electronic communication) is slowly but surely transforming our conceptions of foreign language learning by changing the very notions of who we are and how we represent ourselves through language” (p. 99). The findings of my research support their claim. In this chapter, major themes and discussions of the research findings will be presented, followed by the limitations of the study. The chapter concludes with recommendations for further research and changes in classroom practices.
Major themes and discussions of the research findings

Technology as a research tool and a research subject

In my dissertation research, technology is not only the research subject but also the tool. As Roberts (2003) stated, new technology not only creates new opportunities for learning but also creates ways “to invent new tools for research and evaluation, particularly ways to track and monitor what, how and when learning occurred” (p. viii). My research focused on language learning opportunities afforded by technology, the changing roles of learners and their teacher, and the impact of the learning process on classroom instruction.

In common with many learning management systems, WebCT automatically saves the instructional activities in the online learning environment. That is, the research data was saved without intrusion. The data used in the research, for example, students’ reflective journals (Chapter 2), chat logs (Chapter 3), and essay drafts and peer review messages (Chapter 4) were all saved by WebCT. According to Collentine (2000), user-behavior tracking technologies provide insights into both the product and the process of learners’ efforts. Learners’ experiences as they acquire knowledge traditionally have been provided by ethnographic documentation, which usually is very labor intensive (Davis, 1995). But now, user-behavior tracking technology is able to provide cost-effective investigation of the learning process and learning products, as revealed in my research.

In the two classes researched in the dissertation, the instructional activities—students’ assignments such as reflective journals, essays and grammar exercises, and quizzes and tests—saved in WebCT were useful data sources. More importantly, the instructional records created a chronological timeline of critical incidents and class
occurrences helped create the contexts for data analysis and helped triangulate the data analysis and findings so that the researcher could confirm emerging themes and the teacher could reflect on the teaching practices. Felix (2003) noted that “new technologies offer meaningful learning activities even beyond what might be attempted in an excellent classroom” (p. 13). This dissertation provides good examples of meaningful learning activities and innovative instructional practices afforded by technologies reported in chapters 3 and 4. In chapter 2, even though no specific tasks were designed to investigate their identity development, the heritage learners’ exploration and sharing of their knowledge of Chinese language and culture in computer-mediated communication (CMC) in WebCT did point to the affordances technology can provide to learners for identity development. In Chapter 3, students’ incidental attention to form in online chats, and in their interaction with technology resources were generated by technology. And their attention to form also had an impact on the classroom practices. In Chapter 4, the students’ essay revision and peer review were done in the WebCT discussion board. In traditional classrooms, these activities, tasks, and instructional practices might not be possible or at least difficult to accomplish.

The research findings suggest that technology cannot solve all the problems and challenges faced by foreign language teachers and learners; however, with theoretically and pedagogically sound design of the learning tasks and environment, technology innovations are causing transformation in foreign language teaching and learning. The findings provide rich evidence that technology is powerful in terms of scaffolding students’ language learning, creating online learning community, and providing effective and innovative classroom instruction. As the findings reported in this dissertation
illustrate, the Pinyin Input Method can scaffold students’ development of Chinese writing based on their pronunciation and conversational skills. The essay writing task, peer review, and revision activities led to a friendly and supportive community and provided opportunities for students to construct their knowledge and identities. The technology-and student-generated focus-on-form in Chinese WebCT positively influenced classroom instruction.

**The value of multiple theoretical perspectives**

Major research trends and themes have emerged in technology integration into language curriculum, as revealed in Kern’s (2006) latest review. An important trend is that multiple theoretical perspectives are needed because of the expansion of social and cultural contexts of technology use, the diversity of technology, and the evolution of CALL pedagogy (Egbert, 2005). Using multiple theoretical perspectives informed and enriched my research in terms of investigating the multiple dimensions of language learning.

The study reported in Chapter 2 was primarily informed, and in Chapter 4 was partly informed, by the interactionist perspective of second language acquisition theory (SLA), which has been “widely recognized as one of the ‘respectable’ areas of CALL (i.e. Computer Assisted Language Learning) research” (Davies, 2001, p.16). In her groundbreaking article (1997), “CALL in the Year 2000: Still in Search of Research Paradigms,” Chapelle argued that we need to ground CALL in instructed SLA theories and recommends the interactionist approach to SLA. Citing CALL research in the research tradition in the past eight years, Chapelle (2005) concluded that “the use of discourse and interactionist perspectives for the study of CALL has helped to place
CALL research on more solid grounding relative to other areas of applied linguistics” (p. 63).

However, the interactionist SLA theory has a significant limitation: “it deals exclusively with linguistic dimensions and lacks provision for dealing with cultural dimensions of language learning” (Kern, 2006. p. 186). Because “socio-cultural theory provides a much broader and richer account of the role of interaction in language acquisition” (Ellis, 1999, p.21), Ellis (1999) suggested sociocultural theory as a possible perspective to get a broader view of interaction in research. Sociocultural theory (Vygotsky, 1978; Newman & Holzman, 1993; Lantolf, 1994) has opened a new window to language acquisition, and it is useful in understanding the relationship between social interaction and language development (Ohta, 1995). From the sociocultural perspective, acquiring a second language encompasses more than simply mastering the linguistic properties of the target language (Lantolf and Pavlenko, 1995).

In chapter 4, the sociocultural perspective was a powerful lens in exploring students’ personal lives, beliefs, knowledge, and values in their essays. The critical multicultural theory and approach guided both my ethnographic research and instruction of Chinese-American heritage learners as reported in Chapter 2.

In summary, the multiple theoretical perspectives enabled me to research the multiple dimensions of language learning: linguistic, and social and cultural, and investigated the innovative pedagogy in technology-integrated Chinese language classes mixed with heritage and non-heritage learners.
The diverse learners in the researched Chinese language classrooms

Teaching diverse groups of learners in one class might not be possible in a traditional classroom; however, in the technology-integrated classes featured in the dissertation research, the mixture of different learners did not become an obstacle to effective teaching and learning. Instead, the mix provided some advantages worth further investigation.

The composition of the students in the classes I taught and researched was rather complicated. Two of my three studies reported in the dissertation, that is, chapter 3 and chapter 4, included all subgroups of learners in the classes: traditional foreign language learners of Chinese, American-Chinese heritage learners, and international heritage learners of Chinese. Chapter 2 addressed only American-Chinese heritage learners, a group of learners traditionally excluded in the language classrooms and somewhat ignored in our research. The ethnographic study on this specific group, reported in chapter 2, has been my answer to the call for more attention and research on heritage learners as heritage language education is emerging as an increasingly important field in the United States. The other two chapters in the dissertation have rich pedagogical implications on class instruction for mixed student populations of heritage and non-heritage learners at different proficiency levels.

Teaching and researching diverse learners in the real classrooms addressed an important issue in the fields of second language acquisition and language education: inclusion of all population of language learners in our research. The efforts to include heterogeneous learners in the research answered and supported the call voiced by Ortega
(2005) to “investigate a wider range of L2 populations and contexts for L2 learning and teaching” (p. 434).

The inclusion of diverse learners in the real classroom may also bridge the gap between research and practice and increase the usefulness and effectiveness of my research in terms of its impact on practice. A mixture of diverse learners with different ethnic backgrounds and proficiency levels in the same class is not uncommon. The research suggests that the key to success in a mixed classroom seems to be providing as many interaction opportunities as possible to the learners. With extensive interaction, the diverse learners became consumers and providers of comprehensible input and sociocultural knowledge to teach other. Murphey and Murakami (1998) indicated that interacting with more advanced language learners can be a motivating experience for students at lesser stages of development. Lantolf and Thorne’s (2006) interpretation is similar:

For relatively novice language learners, feedback from students only a year or two in advance of their present writing ability may, in addition to the explicit focus of providing corrections on linguistic structure, provide a proximal and obtainable proficiency goal that interaction with native or near native instructors may not. (p. 256)

Although the studies reported in this dissertation did not address the motivational issues of learners, the findings were consistent with Murphey and Murakami’s (1998) findings and Lantolf and Thorne’s (2006) interpretation. In chapter 4, the essay writing task was instrumental in building a friendly and supportive class learning community in the class, which echoed Lantof and Thorn’s (2006) summary of studies examining Internet-mediated tasks:
The expectation of longer-term commitment directly correlates to the building of stronger relationships and higher levels of interpersonal engagement (for example, Walther 1996). Strengthened interpersonal relationships, in relation to the peer revision activity, are predicted to enhance the near-peer role model effect for the lower-intermediate students (for example, Murphey and Murakami, 1998) and for the advanced students, their construction of language expert identities through practices of “reciprocal teaching.” (Palincsar and Brown, 1984)

This dissertation research reveals the value of mixture of diverse learners in language classroom teaching and research.

**Use of English by Chinese-American heritage learners in learning Chinese**

The sociocultural theoretical perspective enabled me to challenge the traditional supremacy status of teaching and learning grammar and vocabulary in the target language and to explore the role of use of English in learning Chinese in the U.S. context, especially Chinese-American heritage learners’ use of English, their L1, in learning Chinese.

Research findings in chapter 2 revealed that Chinese-American heritage learners needed English to scaffold their social interaction and language development. The use of English, or the use of a mixed code of English and Chinese, was necessary for Chinese-American heritage learners. As Jo (2001) warned, heritage learners’ “mixed language expressions are never easy combinations of both languages, but processes of struggles seeking proper channels for their voices” (p. 31). This finding is consistent with the literature on use of L1 in second language learning. For example, Swain and Lapkin (2000) studied the use of L1 in immersion classrooms and concluded that L1 could be put to good use: “The use of L1 should not be prohibited in immersion classrooms, but neither should it be actively be encouraged as it may substitute for, rather than support, second language learning” (p. 268). In the same vein, Villamil and Guerrero (1996)
suggested the uses of L1 as “the L1 was an essential tool for making meaning of text, retrieving language from memory, exploring and expanding content, guiding their interaction through the task, and maintaining dialogue” (p. 60).

As discussed in chapter 3, heritage learners’ mixed use of languages, Chinese and English, had pedagogical value. In the two classes of diverse learners, American-Chinese heritage learners were all native speakers of English, while the international students and some non-heritage learners did not speak English as their first language. Therefore, the choices of using English and Chinese gave the Chinese-American heritage learners more confidence in expressing their opinions and feelings when switching codes between English and Chinese.

The above findings correspond to Holme’s (2004) characterization of the role of L1 in L2 learning:

Language provides us with the means to think about language. To deny this is to limit our semiotic capability. A first language allows us an opportunity consciously to represent the meanings of a second. To deny ourselves this semiotic opportunity is to deny ourselves the opportunities that language affords us. (p. 209)

To summarize, the use of English seems to be very important to Chinese-American heritage learners whose first language is English, as the research has revealed. The findings supported my pedagogical belief that it is equally important for the learners to make their voices heard in order to share their Chinese knowledge and experiences. In the case of Chinese-American heritage learners, English is their first language; therefore, the use of English is convenient and easy for them which provided them the confidence and ease when expressing their voices.
The multiple roles of teacher, designer, evaluator, and researcher

This dissertation describes my multiple roles of teacher, designer, evaluator, and researcher. Throughout my work, I worked from both a researcher’s and a teacher’s perspective. But, thinking about immediate changes to meet students’ needs and seeking solutions to change the classroom instruction often came before my reflection as a researcher. The value of doing research in real classrooms was obvious to me, especially as the efforts engaged me in the direct improvement of classroom instruction practices. As reported in chapter 3, students’ incidental attention to form changed my lesson plans to meet their learning needs in their proper developmental stages. The study on the essay writing task reported in chapter 4 revealed the needs and values of essay writing in this class, and the challenges in implementing the carefully designed essay writing task.

The research efforts and findings supported many educators’ calls for more research in real classrooms. Researching my own classroom and teaching practices led to better understanding of my students, the learning process, my pedagogical beliefs, and my improvement of pedagogical practices, which reveals the promise and power of action research. As Bransford et al. (2000) stated, “Because action research is a constructivist process set in a social situation, teachers’ beliefs about learning, their students, and their conceptions of themselves as learners are explicitly examined, challenged, and supported” (p. 199). And as Ellis (1999) also suggested, from the SLA perspective, research conducted in real classroom settings is especially valuable, as opposed to research that is merely classroom-oriented (Seliger & Long, 1983) because studying the effects of input/interaction on L2 acquisition provides opportunities for learning through the interactions that occur in the real classroom.
Limitations of the research

The findings of the research provide evidence of online technology enhancing language learning and lend strong support for technology integration into Chinese language classes. Many of the specific limitations of the studies are found in the discussions of each study as reported in each chapter. But, perhaps one of the biggest strengths of the research is also its weakest point: the use of the two real classes. Although a mixture of diverse learners (Chinese-American heritage learners, international heritage learners, and traditional learners of Chinese as a foreign language) did reveal a full picture of the possible learners in a Chinese as foreign language class, the small number of participants in each subgroup, and the small total number of participants, prevented generalization of the results, especially those of chapter 4. Further, as the first users of the Chinese version of WebCT, the student participants and the instructor and researcher were highly motivated and excited about the online activities, although they were sometimes frustrated. At the same time, the students’ awareness of being researched might lead to the Hawthorne effect.

Moreover, at this university of science and technology, the students had ready access to the digitally-enhanced foreign language classroom and other well-equipped computer labs on campus, and students’ computer and Internet-related skills were strong. Belonging to the E-generation, the high school students’ motivation and computer skills were, in some cases, even stronger than their college peers in the classes. Therefore, we should exercise caution when applying the research findings into other contexts.

The results of these studies were also limited by certain aspects of the research design, and conflicts and compromises made by the teacher and a researcher. For
example, in chapter 3, because of the technical problems of the WebCT chat rooms and students’ diverse proficiency levels, the students did not do as many chats in Chinese characters as I planned in order to collect more data for the analysis of focus on form. In addition, in chapter 4, the lower-proficiency students were not able to write all 5 essays in Chinese 202, which prevented me from carrying out the plan of revising all 5 essays. I had to change the task plan by making the number of the revised essays flexible to reduce lower-level students’ frustration. Furthermore, the second part of the study only looked at the correlation between the lengths of finished and revised essays and their test scores. The length of the essays might not be a valid measure because the students’ different L1 writing strategies, life experiences, and cultural and educational backgrounds all might have a great impact on the lengths of their essays and their choice of genres or discourse modes in their essay writing task. All these factors might influence the interpretation of the research findings. Therefore, caution is needed in the interpretation of the research.

**Implications of the dissertation research**

Because education is highly context-specific, researchers cannot provide classroom teachers with ready-made solutions to their specific problems in different contexts (Eisner, 1991):

The researcher might say something like this: “This is what I did and this is what I think it means. Does it have any bearing on your situation?”… Researchers are not the ones to provide rules of procedures to practitioners; there are no sacred seven steps to effective teaching. We offer considerations to be shared and discussed, reflected upon and debated. (pp. 204—205)

While I reported my research findings in this dissertation, it is the practitioner—the teachers, students, the course management system developers, and
instructional designers—that should read my research with caution and weigh the applicability of the findings and recommendations made to them. Some salient implications for practice will be provided below.

**Implications for the classroom teachers of Chinese heritage language learners**

Although all learners were included in the research, the fact that two thirds of the class members were heritage learners invariably led to the result that this dissertation research shed a lot of light on the effective instruction of heritage learners. Heritage learners with low or no reading skills usually are not placed in the second year courses on this campus or at other universities (Chao, 1997). This was the first time that Chinese heritage learners with low reading skills were placed into second-year Chinese language courses with non-heritage learners who had already finished one year of formal Chinese instruction. The four American-born Chinese high school freshmen started the Chinese 201 class with an average knowledge of 40 Chinese characters with 14 the minimum and 77 the maximum. As research suggests, negotiation may be most helpful in the intermediate stages of learning (Smith, 2001) because intermediate learners may do negotiations as both input consumers and output providers due to their relatively more abundant linguistic resources. Heritage learners, unlike traditional second or language learners, even with low or little reading skills, have a relatively rich linguistic repertoire because of their years of exposure to the heritage language and the conversational skills developed in their Chinese-language-speaking homes. In the two classes I researched, the Chinese-American heritage learners posted many messages to the class discussion boards, including Chinese essay drafts and journals in Chinese, evidence that these heritage learners were like intermediate-level students as output providers in the learning environment. Based on the findings in chapter 4, and the test scores indicated in the
following table (i.e. Table 1), I would like to suggest that it is appropriate to place heritage learners without any previous formal instruction and low reading skills in second-year level Chinese language classes as long as students could use Pinyin Input Method to write Chinese characters on the computer. The tests in Table 1 were the ones students took in Chinese 201 and Chinese 202 which included quizzes, listening and reading tests. A more detailed description of the tests in Chinese 202 was provided in chapter 4. The tests in Chinese 201 were similar to those in Chinese 202.

Given the promising learning outcomes of the Chinese-American heritage learners in these two classes, I also call for further research to tap the heritage learners’ linguistic repertoire and seek the potential contribution that heritage learners’ existing knowledge and skills may make to their further learning of the language.

Table 1: Comparison of the test scores of American-Chinese heritage learners and non-heritage learners.

<table>
<thead>
<tr>
<th></th>
<th>Chinese 201 test scores (mean)</th>
<th>Chinese 202 test scores (mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td>American-Chinese heritage learners</td>
<td>264</td>
<td>290</td>
</tr>
<tr>
<td>Non-heritage learners</td>
<td>237</td>
<td>250</td>
</tr>
</tbody>
</table>

**Recommendations for future research**

The dissertation research yields some implications for future research. First, the research was done in a period of two semesters (9 months). It would be worthwhile to do research on the use of WebCT over a longer term and to investigate the relationship between the possible change of the effects of WebCT use, the improvement of the language learners’ proficiency levels, and the classroom practices in longitudinal studies.
Second, in Chinese language learning and instruction, more research on the use of the Pinyin Input Method, which connects the sound and the writing systems of the Chinese language, is needed. Students’ use of the Pinyin Input Method alone demonstrated great potential in enhancing students’ pronunciation, written output, and knowledge of Chinese characters. Furthermore, Pinyin Input Method and CMC tasks demonstrated even greater potential in enhancing the transferability of heritage learners’ oral competence to written competence. This compelling issue of transferability from oral to written competence deserves further investigation.

Third, in the field of SLA, little research exists on the process affecting acquisition (Ellis & Schmidt, 1997). The situation is the same in the field of Chinese as a second/foreign language. Learners’ progress and the learning process have not received much deserved attention because of many teachers’ quantity-oriented curriculum. As Chi (1996) stated, “seat-time and quantity of contact hours and lessons characterize the curriculum agenda” (p. 8). Since user-behavior tracking technology is providing cost-effective investigation of the learning process, as well as learning products, more research is called on the affects of process on Chinese language acquisition.

Fourth, the research yields findings on community formation and literacy and identity development of learners, especially of heritage learners. Literacy and identity development and learning community formation in online learning environment deserve more attention from researchers and educators.

Fifth, while Chinese-American heritage learners’ education of Chinese has gained a lot of attention, international Chinese heritage learners are often still excluded from the foreign language classroom because of their relatively high language proficiency.
However, this dissertation research suggests that the international heritage learners’ beliefs, cultural backgrounds, and identity development are equally important as Chinese-Americans, and they deserve our attention in both instruction and research if we want to get a full picture of heritage language education in terms of learners and contexts.

Acknowledgements

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APPENDIX A: SUBGROUPS OF THE LEARNERS AND THEIR INSTRUCTION TIME IN CHINESE 201 AND CHINESE 202

<table>
<thead>
<tr>
<th></th>
<th>Chinese 201 (N=18)</th>
<th>Chinese 202 (N=16)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IHL</td>
<td>CAHL</td>
</tr>
<tr>
<td>Number (N=)</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>50-minute long-class meeting</td>
<td>3 classes/week</td>
<td>3 classes/week</td>
</tr>
</tbody>
</table>
APPENDIX B: PEER REVIEW OF RESEARCH

Different parts and versions of my artifacts have been undergone public scrutiny at the following publications and presentations:

<table>
<thead>
<tr>
<th>Publications and presentations</th>
<th>Related to the chapters</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Zhang, D.</strong> (2005, November). <em>Adding a WebCT online learning environment to Chinese language class</em>. Presentation at the Panel on Chinese Language Teaching &amp; Learning Online. Annual Conference of Chinese Language Teachers Association (CLTA), Baltimore, Maryland</td>
<td>Two</td>
</tr>
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</table>