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The effectiveness of using Wimba Voice Tools in foreign language instruction

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The effectiveness of using Wimba Voice Tools in foreign language instruction

by

Lingli Yao

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

MASTER OF SCIENCE

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ABSTRACT

In the past two decades, text-based synchronous and asynchronous communication tools have been used as teaching tools in foreign language classes and have been researched intensively for their pedagogical implications. Although their benefits have been identified in foreign language instruction, these benefits are mainly limited in affecting learners’ reading and writing skills due to the tools’ text-based nature. Since listening and speaking skills are also essential to language learners, studies on implications of newly emerging audio-based communication tools are needed. This paper describes an action research project conducted in a Chinese course at Iowa State University (ISU) where an audio-based technology called Wimba was incorporated. This study explored how the new technology was integrated in the foreign language instruction and what its advantages and disadvantages were. Results from student survey, students’ interviews and instructor’s interview indicate that teaching strategies using Wimba can help improve students’ listening and speaking skills. It can also motivate students to practice listening and speaking more often after class. There is no doubt that more research is needed to investigate the audio-based communication technology. This present pilot project serves as a case study to inform both the researcher and ISU foreign language instructors.
CHAPTER 1. INTRODUCTION

1.1 Background

In summer 2006, I started to work as a research assistant for the project of Wimba in the Department of World Languages and Cultures at Iowa State University. This project is a pilot test which intended to explore the pedagogical potential of Wimba Voice Tools. Wimba Voice Tools are a suite of web-based communication tools which can be integrated directly into a Course Management System (CMS) such as WebCT, Blackboard or Moodle. The main characteristic of Wimba Voice Tools is that they allow users to communicate in their own voice either synchronously or asynchronously in the online settings. My duty as an assistant for this project is to help ISU instructors learn how to use Wimba and provide technical support when they encounter problems in using the tools.

I was formerly a language teacher. I was and am interested in technologies that can assist language teaching. I believe that the purpose of technology integration is to make improvement in a classroom situation. I felt lucky to have the opportunity to learn the Wimba Voice Tools which have the potential to improve students’ language learning. Although I don’t have the chance to test Wimba in my own language class now, I have seen some ISU instructors who I mentored using the tools in their language teaching. So I decided to investigate their experience of using Wimba Voice Tools and thus inform my own teaching practice in the future.

Also, when I was mentoring some instructors who were interested in Wimba, I found that these instructors not only wanted to learn how to operate these tools, but also wanted to know how they could implement these tools in their own teaching and how their students would react to the new technology. The later reason could somewhat explain why there were many instructors who knew the existence of the Wimba technology but only a few of them
were willing to learn and test the tools in their own language classes during the past three semesters’ Wimba project piloting period.

So I decided to investigate how the Wimba Voice Tools could be integrated in a language course and what the results could be after the implementation. Among the limited classes which used the tools in the past three semesters, I selected a Chinese course that piloted some Wimba Voice Tools throughout a whole semester as my study case. I hope this case study can benefit me and also those instructors who want to know or use this technology to improve language teaching.

1.2 Area of Focus/ Research Questions

As a former foreign language teacher, I noticed that traditional foreign language teaching was always limited in the classroom. The time restraints of each class make it difficult for teachers to focus on every student in the class. Nowadays more and more emerging computer technologies can be used to supplement traditional classes and to facilitate the communication between the instructor and the students as well as among the students. WebCT is one of the most popular technologies which are widely used in American universities. As a user-friendly integrated Internet environment for the teaching of foreign languages, it offers a variety of tools which can be customized by the educators to their individual needs. The most frequently used tools for communication purposes are email, discussion board, and chat room which help create asynchronous and synchronous environments for students to practice their target language beyond regular classroom learning.

Although the benefits of using these tools to improve students’ foreign language skills, which are reading and writing skills, have been proven by many researchers, due to the text-based nature of the three tools, the students’ listening and speaking skills are not
influenced much. Audio technologies which can provide students with more opportunities to practice speaking and listening skills are in need.

Wimba Voice Tools are such technologies which can meet the above needs. Wimba Voice Tools are web-based components that can be integrated directly into WebCT which facilitate and promote vocal collaboration and coaching. The Voice Tools include Voice Recorder (imbedded audio messages in WebCT), Voice Email (Email with voice component), Voice Board (threaded, voice-based discussion board), and Voice Direct (synchronous web conferencing system). For the last three tools, both instructors and students can not only easily record their audio messages but they can also type text messages as they do with normal emails, discussion boards, and chat rooms.

Iowa State University brought in the Wimba Voice Tools in summer 2006. After some workshops and one-on-one tutor courses, some educators started to pilot these tools in their WebCT courses. Most of them were from the Department of World Languages and Cultures. The teacher participant in this study is one of the educators.

The purpose of this study is to investigate how Wimba Voice Tools were used in the Chinese language class and what the advantages and disadvantages of using these tools are.

My study questions are:

1. How did the Chinese teacher use the Wimba Voice Tools in her language class?
2. What were the benefits of each Wimba Voice Tool used in this class?
3. What were the problems when using each of the tools?
CHAPTER 2. LITERATURE REVIEW

This chapter addresses several topics associated with the use of Computer-Mediated Communication (CMC) technology and Wimba Voice Tools in second and foreign language classes. Since the Wimba Voice Tools combines the features of text-based CMC and audio technology, it is expected that findings from relevant research will help to define the scope of my present study, which aims to explore the benefits and problems of using Wimba Voice Tools in second and foreign language classes. Thus, this chapter begins with a review of research findings concerning the use of text-based synchronous CMC in second and foreign language learning context. In section 2.2, findings in the application of asynchronous CMC in second and foreign language learning are summarized. Results from recent research exploring the use of audio-based CMC, which includes both Wimba and non Wimba technology in second and foreign language learning are reviewed in section 2.3.

The use of CMC for group discussion was introduced into the field of foreign and second language teaching and learning in the late of 1980’s (Warschauser, 1996). CMC has become widespread in this field ever since, probably due to the fact that it offers the capabilities to create conditions which may result in an optimized language learning environment. Some of the positive features that CMC is claimed to provide are: (a) the possibility to foster greater learner autonomy and empowerment (Belisle, 1996; Warschauer et al., 1996); (b) the flexibility to design and implement language learning activities which “facilitate cross-cultural exchange such as penpal writing, long-distance interviews, shared research projects, joint student publications and multi-class simulations” (Warschauer et al., 1996, p2); and (c) the possibility to create a highly interactive environment which may result in a high rate of learner participation (Chun, 1994; Gonzalez-Bueno, 1998; Kelm, 1992; Kern, 1995).
2.1 Synchronous Text-based CMC

CMC environments for communication may take up two distinct forms depending on the characteristics of the communication as defined by time and speed. Recent studies have investigated the application of both subtypes of CMC in foreign and second language learning contexts. The first subtype is commonly referred to as real-time interactions by sending and receiving messages with a slight delay (i.e., only a few seconds).

In a preliminary report on the use of synchronous CMC in the teaching of Portuguese, Kelm (1992) observed that the role of the participants in the tasks was dramatically affected by the environment, which seemed to account for what he terms a ‘leveling effect’ (p.442). Kelm noted that the patterns of interaction seemed to be reshaped; different degrees of proficiency did not seem to affect the discussion (i.e., more proficient learners could not dominate the discussion and less proficient learners took advantage of the environment to express themselves). This study also pointed to some of the general characteristics of the learners’ exchanges (e.g., more candidness and expression of personal feelings than in oral interaction, open-ended nature of the discussions, etc.).

In 1994, Chun reported similar observation related to participation and affect but took a closer look at the type of discourse which English-speaking learners of German produced in synchronous CMC by identifying the type of interactional speech acts generated in the online discussions. Chun concluded that the use of synchronous CMC for class discussion allowed learners to use a variety of language functions in different contexts and thus “to play a greater role in managing the discourse” (p.17). She argued that this type of environment helps the learners to develop their interactive competence through writing; a type of competence which, she contends, could “gradually be transferred to the students’ speaking competence as well” (p.29).
The apparent similarities between spoken and synchronous CMC discourse prompted researchers to investigate their differences. Kern (1995) compared oral classroom discussion with synchronous CMC discussions in the teaching of French as a foreign language to American English speakers and concluded that electronic environment restructured the learners’ interaction in a positive way by providing more opportunities for participation and reducing communication anxiety. He reported that the quantity of the language output in synchronous CMC, measured in number of turns and T-units, was higher in the electronic environment that in face-to-face discussions. Similarly, he noted that instructor intervention in synchronous CMC was fewer and tended to focus on content rather than form (i.e. the opposite of what was typical in oral class discussions). Kern also investigated some of the features of the type of discourse produced in both modes (i.e., electronic and face-to-face) focusing on language functions and morphosyntactic features. He noted that synchronous CMC promoted learners to use a wider variety of language functions, verb forms and clause types.

In a similar study published in 1996, Warschauer compared face-to-face with synchronous CMC discussions addressing aspects related to participation, syntactic and lexical complexity, and salient language features in those two modes. The subjects were ESL students from four nationalities who had enrolled in an advanced composition course at an American community college. Consistent with previous researches (e.g. Chu, 1994; Kelm 1992; Kern, 1995), Warschauer reported an increase in the learners’ participation in the electronic mode as well as in the syntactic and lexical complexity of language output (measured by coordination index and type-token ratio respectively). The salient language features reported in the two modes were related to quantity of language (longer turns in synchronous CMC) and register (more formal language in electronic mode).
2.2 Asynchronous Text-based CMC

The second subtype of CMC is generally referred to as asynchronous CMC. Like synchronous computer-mediated communications, asynchronous CMC has gradually gained popularity in the field of foreign and second language teaching. Asynchronous CMC environments can be described as those in which the participants do not necessarily have to be logged on to the network (as is the case in synchronous CMC) and thus do not expect an immediate response from their audience. The time delay factor increase as least 2 to 3 minutes from the time a message is sent to the time it is received (Warschauer, 1995). Once sent, messages are stored in the environment and can be retrieved by the recipient(s) when they log on to the system.

In a study published in 1996, researchers in the field observed that “so far the most popular forms of CMC for language teachers have been e-mail and asynchronous conferencing” (Warschauer et al., 1996, p.2) Textbooks and online resources intended for second and foreign language instructors have attempted to address the demand for assistance with the technical aspects of the environment (e.g., Warschauer, 1995) as well as methodological concerns such as the types of activities that can be implemented (e.g., Belisle, 1996; Kroonenberg, 1995; Lally, 1997; Randell, 1998; Robb, 1996).

The increasing use of asynchronous CMC environments, mostly in the form of e-mail, prompted researchers to analyze and describe the benefits that their application could offer for foreign and second language instruction. Studies in this area include discussions about the language learners produce from a genre perspective (Daly, 1996), the ways in which CMC environments can empower learners and help to build a more equitable power structure in the classroom (Warschauer et al., 1996) or argue that the use of e-mail in second and foreign language instruction not only increase the learners’ chances for success in the future workplace, but also improves their writing (Lally, 1997). These latter studies provide
thoughtful justification for the use of this technology showing anecdotal evidence to support their claims.

Asynchronous CMC has also been described as an effective tool to develop the learners’ communicative and thinking skills (Kroonenberg, 1995). In her report, Kroonenberg related her experience using synchronous and asynchronous CMC in a multinational setting in Hong Kong with 9-12 grade EFL learners and with teenage Chinese EFL learners. She described a progression or activities which she used to introduce learners to the environment and later on to generate discussion and concluded that these activities fostered the learners’ participation, communicative and critical thinking skills. Learners who seemed to be too shy to participate in class discussion had an opportunity to express their opinion and became very expressive in the CMC environment (Kroonenberg, 1995).

Other reports have provided similar anecdotal accounts of the way CMC environment (including synchronous CMC [Kelm, 1992]) seem to promote candidness among the participants (Lally, 1997) and engage learners in tasks which the authors label authentic (Randell, 1998). Gonzale-Bueno (1998) reported some of the salient features she observed in asynchronous CMC interactions. The participants, 50 learners of Spanish as a foreign language, volunteered to take part in a project that involved writing a dialogue journal in the TL to the class instructors during two semesters. The instructors responded individually to each of the students’ entries. Gonzalez-Bueno concluded that the language produced in those entries was characterized by the following features: (a) greater quantity of language than in traditional paper-and pencil assignments (these latter assignments are not described in the study); (b) more variety of language functions (e.g., learners frequently asked questions and used discourse management markers such as reformulation of information from a previous message); (c) more student-initiated interactions; and (d) more personal and expressive language use.
Although all these reports have contributed valuable information to the field, many of the asynchronous CMC studies above appear to have been triggered by the same issues which researchers have investigated in synchronous CMC. They offer anecdotal evidence about the ways e-mail can improve classroom participation and facilitate dynamic interactions with real audiences; they address differences between electronic and conversational discourse, paper-and-pencil and asynchronous CMC, and synchronous and asynchronous CMC. They have highlighted features in the mode of language (e.g., electronic vs. face-to-face discourse) and have analyzed the effect of temporal constrains on discourse (e.g. synchronous vs. asynchronous electronic environments). In sum, they have provided important data, including descriptions, accounts and insights into the application of CMC in language learning.

2.3 Computer Voice Conferencing Technologies

All the research mentioned above has been conducted using text-based communication tools. Restrictions on communicating through written words may be advantageous in some subject areas and in achieving certain kinds of pedagogical goals. For instance, Beauvois (1998) argued that slowing down communicative process by using CMC seems to bridge the gap between oral and written communication. In addition, written forms of the speech allow language teachers and learners to correct errors. However, this restriction may be impedimental in teaching listening and speaking skills, which are as important as reading and writing skills in the development of communicative competency. Therefore researches aiming to explore the issues of enhancing listening and speaking skills through computer voice conferencing technologies are in need.

In recent years, the Open University of the United Kingdom has made an effort to find ways to provide opportunities for oral interaction to distance learners of foreign languages. Stevens and Hewer (1998) reported an initial attempt to address this need by the
use of telephone audio conference during 1995 and 1996. The purpose of Steven and Hewer (1998) was to describe what appeared to be happening during the audio conference and examine students’ and tutors’ responses to the activities that were involved. They found that students concentrated on communicating the message rather than worrying about grammatical errors in the learning environment. The majority of students and tutors perceived the audio conferencing activity as critical for language learning.

The next step taken by the Open University of the United Kingdom was to create an electronic learning environment for the facilitation of communication among foreign language learners. This environment consisted of a synchronous audio conferencing software, email, and web pages where information about activities and technical support were located. Köter, Shield & Stevens (1999) reported that the new environment provided a chance for the students to practice their speech, to receive rapid feedback from their peers and listen to other students. However, the students remained reserved and insecure about communicating in the anonymous environment and needed more time to accommodate the new settings. In addition, difficulties were found in turn-taking routines, since the students lacked the experience on how to react without visual cues.

In 2003, Hampel reported on how, continuing their attempt to provide quality of spoken communication to their distance learners, the Open University of the United Kingdom implemented synchronous communication software that involved the use of audio and graphics in 2002, after several pilot trials in 1999 and 2001. This study found that quieter students were not more likely to participate in the audio-graphic environment and that technical problems and difficulties in determining a consistent turn-taking policy made the communication less spontaneous than regular discussions. However, some students and tutors felt that their oral skills had been improved and overall, students were more in control of the conversation, as opposed to the traditional teacher-centered classroom discussions.
In 2004, Hampel & Hauk conducted another study on the use of voice conferencing in foreign language classes at Open University of the United Kingdom with Lyceum, an Internet-based audio-graphics conferencing tool, as the study object. They examined the process of development and implementation of online tuition in terms of activity design, tutor training, and student support. Several areas were identified as crucial to establish efficient processes and systems: continuous communication with student, extensive training of tutors and other stuff, and comprehensive developmental testing. As a result, the students reported a variety of technical problems, such as poor quality of audio, insufficient minimum hardware requirement, slow response to queries and so on. In addition,quieter students seemed unwilling to participate in the discussions.

Wimba Voice Tools are relatively new audio conferencing technologies. They include four tools: 1) Voice Email, which allows users to easily record and add sound to their message in addition to text; 2) Voice Board, which enable asynchronous discussions using sound, text, or a combination of both; 3) Voice Direct (live voice chat), which allows users to hold one-on-one or group discussions; and 4) Voice Recorder, which allows instructors to easily record and add voice message to WebCT pages. These tools combine the features of CMC (synchronous and asynchronous) and audio technologies which can be used to benefit second and foreign language teaching. But to my knowledge, only a few studies have looked into the use of Wimba Voice Tools in this area.

In 2001, Cho & Carey carried out a study to evaluate the impacts of Wimba Voice Board on Korean language learning. It was found that the use of Wimba Voice Board increased accuracy and fluency in students’ listening and speaking. It also reduced students’ anxiety often experienced with foreign language speaking and listening. Another benefit for the use of Wimba Voice Board was its handiness, since it eliminated the needs for the students and teachers to carry any specific voice recording equipment such as cassette tapes.
or tape recorders. A limitation of this study is that the report did not describe the instruments used to determine the benefits of the technology.

In 2003, another study on the use of Wimba Voice Board was carried out by McIntosh, Braul, & Chao at the University of Alberta. They evaluated the viability and effectiveness of Wimba Voice Board as a language learning tool to enhance students’ speaking and listening skills. They found that after two or three sessions, the students lost their initial shyness about record their voices and the online environment encouraged the development of communicative competency in a non-threatening setting. However, some students were hesitated to share their voices on line for others to listen and some felt frustrated that Wimba slowed down their exchange of ideas with their classmates. The reason for this last finding is that the Wimba Voice Board, an asynchronous technology, was used synchronously by students. Overall, the majority of students agreed that Wimba Voice Board was helpful in developing listening and speaking skills and user-friendly.

### 2.4 Summary

Computer-Mediated Communication (CMC) technology has been used as a teaching tool and has been studied for its pedagogical implications in second and foreign language teaching for almost two decades. In the literature, CMC technology is claimed to have positive features which can result in an optimal language learning environment. Some of the features are the possibility to foster greater learner autonomy and empowerment, and the possibility to create a highly interactive environment which may result in a high rate of learner participation. These results mainly come from the early studies on text-based synchronous and asynchronous CMC tools which are also proved to be beneficial to improve foreign language learners’ writing and reading skills.

Recently, audio components were added to CMC technology. Results from limited research conducted on the new technology indicate that it has potential in foreign language
teaching. Wimba Voice Tools combines the feature of text-based synchronous and asynchronous CMC and audio components. More studies should be conducted to explore how they can benefit foreign and second language teaching.
CHAPTER 3. METHODS

3.1 Research Design: Action Research

In this section, I will explain the research design I used and the model I followed in my study. The type of research used in this project is called action research. As defined by Mills (2003), “Action research is any systematic inquiry conducted by teacher researchers, principals, school counselors, or other stakeholders in the teaching/learning environment to gather information about how their particular school operates, how they teach, and how well their students learn. This information is gathered with the goals of gaining insight, developing reflective practice, effecting positive changes in the school environment (and on educational practices in general), and improving student outcomes and the lived of those involved” (p.5). As mentioned before, I was a former language teacher. I was and am always interested in understanding how technology can assist language learning and teaching. Although I can not conduct this study in my own class now, I think results from others’ practice can inform my future language teaching as well. In addition, as a present Wimba tutor to ISU instructors, I hope my research will arouse their interest in this new technology and thus benefit their language instruction.

The model of action research used in my study is a common one. It involved each of the five steps as Calhoun (1994) listed, from selecting area, collecting data, organizing data, analyzing and interpreting data, to taking action. As shown in Figure 1, action research is usually a cyclical process. It needs researchers and practitioners to continue to focus on their selected area and thus inform their action accordingly. My current study is targeted on the first cycle of the action research.
3.2 Timeline

The timeline presented here shows the process and progression of this study from the initial planning and research stages to the point of the projects’ findings.

Phase 1 (January-April 2007)
- Review related literature
- Develop research instruments
  (Semi-structured interview questions and student survey)
- Submit Human Subject Research Form to ISU Institutional Research Board

Phase 2 (April 20-May11)
- Administer online student survey
- Interview the instructor
- Interview the students

Phase 3 (May 14- June 10)
• Begin analyzing data

Phase 4 (June 11-18)
• Complete data analysis
• Write up study results

Phase 5 (July 2-10)
• Present findings to ISU committee

### 3.3 Participants

The participants in this study include the Chinese course instructor Emily and her students:

#### 3.3.1 The Chinese Instructor

Emily is an assistant professor of Chinese in the Department of World Languages and Cultures at Iowa State University. She earned a Ph.D in comparative literature. Her special areas of interest are Chinese aesthetic theory, contemporary Chinese popular culture and cinema. She has been teaching undergraduate courses in both Chinese language and culture for several years.

Emily is a language instructor who keeps strong interest in learning and utilizing new technologies which she thinks can benefit her language teaching. In summer 2006, when Wimba Voice Tools were introduced to Iowa State University, Emily was one of the instructors who first tried the tools in their WebCT courses. She started learning Wimba at the beginning of the fall semester in 2006, and began using some of the Voice Tools in Chin 301 right after being mentored only once by me, a research assistant for the Wimba project. With my help, she set up the Voice Tools she needed and tested each one of them before it could function properly.

Emily’s Chin 301 was a three-credit course designed for college students in their third year of a Chinese curriculum. The emphasis of this course was on Chinese contemporary
issues and practicing real-life application of Chinese language at advanced-level. The course guided students to actively participate in a process of improving all four language skills: speaking, listening, reading and writing. All the lectures were delivered in Chinese throughout the course. Students met in the classroom three times a week with each session being one hour. Before Wimba was introduced to this course, Chin 301 was basically a reading class. Learning mostly occurred in the classroom. Emily did use WebCT for the course, but what she mainly did was to make announcement or to give assignment in the Calendar. In the past, students could only listen to or speak Chinese for three hours each week during the class session. After Wimba Voice Tools became available to ISU instructors, Emily started to use some Voice Tools to design many listening and speaking activities for the students to practice the target language after class, which significantly extended the Chinese language immersion time and space for the students. The details of the activities she designed will be discussed later in Chapter 4.

3.3.2 The Students

All the other participants in this study are the students who were enrolled in Emily’s Chin 301 class during fall semester 2006. Their experiences of and reactions to the use of the Wimba Voice Tools will help answer the second (what are the benefits of using each tool?) and third (what were the problems when using each tool?) research questions.

The Chin 301 class consisted of 19 students. Eight of them were students from a nearby high school who took this course as an advanced placement course. These seven students were under the age of 18. ISU Institutional Research Board (IRB) requires participants’ consent forms from both participants and their parents for students under 18. Since it was difficult to get all the parental consent forms in a limited time, I targeted the other 12 adult university students as my potential student participants. One student quit the
course before the mid-term examination. As a result, there were 11 student participants in my study.

Among the eleven adult students, five of them are heritage Chinese learners whose parent(s) is (are) Chinese; the other six are non heritage learners who could learn Chinese only at school. Five of them are male and six are female. Their ages range from 20 to 34 years old. None of them had any experience with Wimba Voice Tools before they took Chin 301. During the fall semester 2006, they were all required to use the Wimba Voice Tools to conduct language learning activities.

3.4 Procedure

Emily’s Chinese class started in August and ended in December 2006. The primary reason why I chose her class for my study was because she was the first professor who reported satisfactory and successful pilot results in using Wimba Voice Tools. The second reason was that I observed her use of Wimba in the Chinese WebCT course during the whole semester when I was her Wimba mentor and tech-supporter. In January 2007, I started to collect and review publications with the keywords being Wimba Voice Tools and other Computer-Mediated Communication (CMC) technology in second and foreign language classes.

Then with the help of my three committee members and another colleague, I developed a student survey questionnaire, semi-structured survey questions for the students and questions for the instructor.

After the permission to conduct this study from Iowa State University Institutional Research Board (see Appendix A) was secured, I invited the 11 ISU students who were enrolled in Emily’s Chin 301 to participate in my study. An email introducing myself and my study was sent out to each student. A link, which directed the students to the online survey when being clicked, was also included in the email. The first page of the online survey was
an informed consent letter which explains the purpose and requirements for participation, the risks, benefits, costs and rights in participating in this research. Students were also informed that clicking the “Next” button at the bottom of the webpage indicates they voluntarily agree to participate in this study. If they click the “Next” button, they will be directed to the actual survey. If they click the “Exit the survey” button, it indicates that they do not wish to participate and then they will be exited from the survey. I received no responses from any of the students after sending out two initial emails. With the instructor’s permission, I sent out a third email in both her and my name. I also tried each student’s phone number stored in the course archives and succeeded to reach five of them. After all this work, I received 8 survey responses altogether.

Besides the online survey, I also conducted semi-structured interviews with three non Chinese heritage students and the instructor individually. Interviews were recorded and transcribed later for data analysis.

3.5 Instruments

Three instruments were used in this study. One was a student online survey questionnaire; the other two were the semi-structured interview questions for students and for the instructor. The next section will discuss how these three instruments were developed.

3.5.1 Survey

Based on my research questions, I developed a draft student survey to explore students’ experience of using Wimba in their Chinese learning process. In April 2007, I showed the instrument to my committee members in a proposal meeting. Each of them gave me helpful suggestions to improve my draft. For example, the professor from the Department of English suggested that I should describe the voice tools in detail to remind the students of what each tool is like, because almost one semester had passed and they might have forgotten what they did with the tools. His second suggestion was that some general questions
regarding the benefits and disadvantages of using all Wimba tools should be divided to separate ones according to different voice tools to avoid unnecessary confusion. My major professor suggested that I pilot this survey to make further improvement. So I sent a request to the director of the Language Studies Resource Center in the Department of World Languages and Cultures at ISU for help, since he knew Wimba and was also familiar with foreign and second language teaching. After he took the pilot survey, he suggested that some open-ended questions be reworded as scale choice questions. He also suggested that questions related to the same voice tool should be grouped together. The final survey instrument was created by using an online software named SurveyMonkey (http://surveymonkey.com), which is a popular survey generating tool for researchers. The text version of the final survey is attached in Appendix B.

3.5.2 Interview

Questions used in the interviews with students and the instructor were developed under the guidance of my major professor. Since all the interviews were semi-structured, the questions in Appendix C and D only capture the main idea and focus of the real interview questions. In the process of interview, I might use alternative words and skipped a particular question/s depending on participants’ willingness, comfort, and flow of previous responses.

3.6 Data Sources

Data for this study were collected from multiple sources. Table 1 illustrates how data were used to answer each research question.
### Table 1. Data sources for research study

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Data Source #1</th>
<th>Data Source #2</th>
<th>Data Source #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How did the Chinese teacher use the Wimba Voice Tool in her language class?</td>
<td>Researcher’s observation of the Chin 301 WebCT course</td>
<td>Instructor’s interview</td>
<td>Students’ interview</td>
</tr>
<tr>
<td>2. What were the benefits of each Wimba Voice Tools used in this class?</td>
<td>Student online survey</td>
<td>Instructor’s interview</td>
<td>Students’ interview</td>
</tr>
<tr>
<td>3. What were the problems when using each of the tools?</td>
<td>Student online survey</td>
<td>Instructor’s interview</td>
<td>Students’ interview</td>
</tr>
</tbody>
</table>

For research question 1, the triangulated data came from the instructor’s interview, the students’ interview and the researcher’s observation notes taken from the Chin 301 WebCT course. Although the class ended in December 2006, all the course information and submitted assignments were archived in WebCT and still available to the instructor, the students and the researcher who was enrolled as a course designer. I could track every class
activity conducted in the WebCT and thus confirm the instructor’s and the students’
description of Wimba usage in this course.

For research question 2 and 3, the triangulated data came from students’ online
survey responses. Students’ interviews were also analyzed to see if they correlated to the
findings of the survey. In addition, the findings from the instructors’ interview contribute to
answer the questions as well.

3.7 Data Analysis

Quantitative data from student survey were analyzed via the online survey tool called
“Survey Monkey”. The data collected by Survey Monkey were descriptive and included
means, standard deviations and distributions for each item.

Students’ responses to the open ended survey questions were exported from the
online records to a word file. Both students’ and instructor’s interviews were transcribed. My
notes taken from the Chin 301 WebCT course were also printed out. Each of the four sets of
qualitative data was read and themes were coded in different colors. Then all the data were
reread to confirm the coded theme. The statements from different data sources supporting
the same theme were grouped together on another blank word file followed by their source
name.

For example, when I read the qualitative data, I found students and instructors had
different answers to the question “What do you like best about the Voice Email tool?” But I
also noticed that their answers had something in common which was they all pointed out that
students usually practiced reading a lot when they used it to record their assignments. I
highlighted the words indicating the time students used in practicing and wrote “practiced
reading a lot” next to them. After I read all the data for the second time, I was sure this was a
correct theme from the qualitative data. The statements in Table 2 were copied and pasted
from the original data where the theme mentioned above was emerging. The remaining themes were identified and verified using this same method illustrated in Table 2.

Table 2. An example of how to identify a theme from qualitative data

<table>
<thead>
<tr>
<th>Statements</th>
<th>Data source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor: “It provided me the means to check everybody’s reading of the text outside class time and students the means to practice reading of text many times before they sent me their recording.”</td>
<td>Instructor interview</td>
</tr>
<tr>
<td>Student A: “I used to practice (reading) quite a few times before I sent out the recoding. Usually at least 10 times if I was really picky.”</td>
<td>Student interview</td>
</tr>
<tr>
<td>Student B: “Actually when I used the Voice Email tool, I rerecorded many times. I can remember I sat down one time and practiced 30 times for a 3 minute passage.”</td>
<td>Student interview</td>
</tr>
<tr>
<td>Student C: “The instructor required the recording be less than a certain length of time, so I had to practice a lot. I would practice at least an hour or more.”</td>
<td>Student interview</td>
</tr>
</tbody>
</table>
CHAPTER 4. RESULTS AND DISCUSSION

In this chapter, the data gathered from this study are presented and discussed. First, my observation notes of Chin 301 WebCT course, as well as the results from interviews with the instructor and the students, will be analyzed to understand how the teacher used the Wimba Voice Tools in her Chinese teaching. Then, data collected from the online student survey will be analyzed to identify the benefits of each Wimba Voice Tool used in this class and the problems they encountered when using each tool. Finally, results from the instructor’s interview and students’ interview will be examined in depth to enhance the understanding of previous findings. A general discussion of the results will conclude this section.

4.1 Research Question 1: How Did the Chinese Teacher Use the Wimba Voice Tools in Her Language Class?

As mentioned before, Wimba consists of four voice tools: Voice Recorder, Voice Email, Voice Board, and Voice Direct. In Chin 301, the instructor only piloted the first three tools. She embedded these three tools in the WebCT course homepage along with other WebCT tools (see Figure 2).
The first orange icon with a bubble inside represents the Voice Recorder tool. Voice Recorder (see Figure 3) allows the instructor to record his/her voice. Students can listen to the instructor’s recording and save the audio file for later use, but they can not record their own voice using this tool. In Chin 301, Voice Recorder was named “Ting Shuo Xun Lian”. Emily usually used it to record assignment instructions. Students had to understand the recording before they would know what they were expected to do for their assignment. One example of this recording is “Dear students, your assignment for this week is to read lesson 2 ‘Night Market in China’. Please use Voice Email tool to record your reading and send it to my electronic mail address before next Tuesday. The maximum length of the recording that the Voice Email tool can do was set as two minutes. So you have to finish reading the whole text in this limited time. Please practice as often as you can before you start to record.” (Note: This is the translation of the original Chinese recording.)
The second orange icon with a “@” sign inside represents the Voice Email tool. Voice Email (see Figure 4) allows both the instructor and students to record and send out their voice messages as well as type a text message like a normal email tool. In addition, the maximum length of each recording can be set by the instructor. In Chin 301, Voice Email was named “Ting Shuo Dian You”. Emily usually asked her students to use this tool to record their textbook readings in a limited time and sometimes record their writings. After listening to their voice messages, she sometimes gave them feedback by sending her own recording. For instance, one feedback given to a student after listening to his submitted textbook reading is “Hello John, I heard your voice email just now. You did a very good job. Your reading was very fluent. But there are still some phrases you didn’t pronounce quite accurately, which are ‘Xi Ying’ (attract), ‘Shang Dian’ (shop), ‘Jiang Yi Jiang Jia’ (bargain), ‘You Shi’ (sometimes), ‘Lao Ban’ (boss), ‘Ji’ (crowded), ‘Chao’ (noisy), and ‘Luan’
Sometimes Emily would invite individual student to listen to his/her submitted recording with her during the office hour. She said sometimes students could recognize their own pronunciation errors while listening. If they failed to do so, she would tell them where the errors were and how to pronounce correctly.

Figure 4. Voice Email tool

The third orange icon with a notebook picture inside represents the Voice Board tool. Voice Board (See Figure 5) is a threaded discussion board where users can record and post audio messages as well as text messages. In Chin 301, Voice Board was named “Ting Shuo Yuan Di”. Emily piloted this tool less often than the other two tools. She sometimes asked
her students to use this tool for group discussion. One such activity is that students were required to read all their classmates’ submitted written dialogue named “Teapot” and then discuss in the Voice Board which one is the best among all. Another example is that the instructor raised three questions in the main thread. Students were required to answer these questions in their own voice. These three questions were: “Have you contacted your partner? How did you contact him/her, via email or phone? Which language did you use, English or Chinese?” (Note: This is the translation of the original Chinese recording.)

![Voice Board tool](image)

Figure 5. Voice Board tool

As described by Emily, since Wimba Voice Tools are embedded seamlessly in WebCT, they can be used in conjunction with other WebCT tools to make students’ learning
experience a real journey of discovery. Take the “Moon Lady” assignment for example. First students had to read and understand the notice in the WebCT Calendar tool to be able to find the oral instruction in one of the Wimba tools (Voice Recorder). Then they must listen and understand the oral instructions very well before they could find the hidden script that they had to read for the assignment. Once they found and read the assignment script, they had to write a synopsis of the story and then retell the story in one and a half minutes. Finally they had to record their story in the Voice Email and send it to the instructor. The whole process of this activity involved practicing all the students’ language skills which are reading, listening, writing and speaking.

The next logical step after understanding how the Wimba Voice Tools were used is to examine the effects of each tool in the foreign language instruction.

4.2 Research Question 2: What Were the Benefits of Each Wimba Voice Tool Used in This Class?

4.2.1 Benefits of the Voice Recorder Tool

The results from student survey indicate that 62.5% of the students agreed and 25% strongly agreed that the Voice Recorder tool helped their listening skills. Both the instructor and the students’ statements indicate that the reason for this is mainly because students could listen to the teacher’s recorded instruction for each assignment again and again until they could understand it. Thus the tool offered the students more listening opportunities.

When asked about the advantage of using the Voice Recorder tool, the instructor answered that, “Students had the freedom to listen to an assignment/directions many times until they completely understood it.” She indicated that before Wimba was introduced, she always gave assignments in written form, because if the assignments were given only orally in class, those who failed to understand never did what they were asked to do. She also mentioned that “Since understanding the oral instruction is the prerequisite for what they
need to do, students are more motivated to listen (to the recording) because here listening has a practical purpose and helps solve a real problem, i.e., it makes learning through doing possible.” (Instructor interview, May 1st 2007)

The results from students’ interviews also reinforced the instructor’s statements. One student reported that the ability of the Voice Recorder tool to save recordings as mp3 audio files allows him to listen to the recordings repeatedly in other applications and devices. Since their assignments were given in this format, he thought “It is a good way to force students to figure out what is being said.” Another student also perceived that the Voice Recorder tool helped improve his listening skills. He said when the teacher gave them instructions in class, they only got one chance to listen to the instructions. If he didn’t understand what she had said, he couldn’t have a chance to grasp what exactly she was trying to say. But with Voice Recorder, he could listen to the instructions over and over again. He liked the idea of giving assignments through this tool. The third student thought the Voice Recorder tool helped improve his listening skills because it forced him to listen. Since the instructor assigned them their work via this tool, he had to understand what the work was. Otherwise “it would be a big problem, because sometimes if I decided to be lazy and didn’t listen to the recording carefully, I would miss an important aspect of our assignment and I would misunderstand it. So it forced me to be more diligent and to practice my ears.” (Student C interview, May 9th 2007)

Another advantage of this tool is its ease of use. The results from student survey show that 87.5% of students agreed that this tool was easy to use and 62.5% agreed that they enjoyed using this tool for the course. The instructor reported that, “It’s very easy to learn. One can work with the tool intuitively.” When asked what they like most about this Voice Recorder tool, some students reported that “It’s straight-forward and intuitive.” “It’s easy to use.”
4.2.2 Benefits of the Voice Email Tool

The results from student survey indicate that 75% of the students agreed and nobody strongly agreed that the Voice Email tool helped their speaking skills. Statements from the instructor and the students indicate that this is mainly because the students were often required to submit recordings of a limited length of time; they had to practice reading aloud a lot in order to meet the requirement.

The instructor said, “It (the Voice Email tool) makes oral submission of assignments possible. It forced students to read and speak more outside the class. It provided me the means to check everybody’s reading of the text outside class time and students the means to practice reading of text many times before they sent me their recording.” (Instructor interview, May 1st 2007)

All three students that were interviewed stated they usually practiced reading text a lot before they submitted their recording assignments.

Student A reported that he used to practice reading at least 10 times before he sent out his recoding. He thought he was “picky” about his assignment. The way he practiced reading is that he listened to the text recording provided by the instructor first, and then switched over to the voice recorder trying to speak in the same way that the instructor spoke. “I just tried to copy that as much as possible.” (Student A interview, May 3rd 2007)

Student B reported that when he used the Voice Email tool, he usually practiced at least 30 times. If an assignment was to read a passage in less than 3 minutes, he would start at finishing reading in about 5 minutes, and then try to read faster to gradually decrease the time. Eventually he could finish reading in less than 2 minutes. The reason why he practiced a lot was because he “just wanted to be perfectionist”. He thought the Voice Email activities helped his speaking because “reading more can develop fluency, it can help familiarize your mouth with the movement and correlation that requires.” (Student B interview, May 5th 2007)
Like Student B, Student C is also a perfectionist. The time he spent on practicing each reading assignment was “at least one hour or more.” After practicing for half an hour or more, he could finish reading the assigned passage in the required time. But he wouldn’t stop. He would keep practicing until he could make it in less time, because he wanted his speaking to be much smoother. Usually the time length of his submitted recording was 10 to 20 seconds less than the requirement. Before recording, he would speak aloud to himself a lot of times, read the parts that he didn’t get very well, practice the transitions between certain sentences, and then start to record.

Based on my observation notes of Chin 301 WebCT course, I, as a native Chinese speaker, perceived that non-heritage students made great progress in terms of word pronunciation, tones and transitions between sentences in their later recording assignment compared with their early submissions. Although the instructor didn’t arrange a pre and a post test to examine students’ speaking skills, in the interview, she claimed that she saw her students’ progress in reading. She also mentioned that “when the instructor of Chin 304, the course which my students took after Chin 301 in the following spring semester, told me that he was surprised that the students’ reading of text was beyond his expectation, I was convinced that the Wimba tools had made a difference in students’ learning.” (Instructor interview, May 1st 2007)

Like the Voice Recorder tool, the ease of use is an advantage of the Voice Email tool as well. The results from student survey show that 100% of the students agreed that the Voice Email tool was easy to use. Sixty-two point five percent of the students agreed that they enjoyed using the Voice Email tool for the course. A student explained, “It was really easy, because a lot of times if you want to record your voice, you have to use separate software in your computer or use a voice recorder, while the Voice Email tool was built right in the WebCT, you can just click and record your voice. I think it’s really handy, because it can save time as well, it’s really easy to keep track of how much time you have left when you
are recording.” (Student A Interview, May 3\textsuperscript{rd} 2007) Wimba’s benefits of handiness and increased accuracy and fluency in listening and speaking were in line of Cho & Carey’s findings in their research (2001).

### 4.2.3 Benefits of the Voice Board Tool

The results from student survey indicate that 50\% of the students agreed and 12.5\% strongly agreed that the Voice Board tool helped improve their listening skills. Fifty-percent of the students agreed that the Voice Board tool helped improve their speaking skills. Since the Voice Board tool combined some features of both the Voice Recorder tool and the Voice Email tool which allow the instructor to record information and the students to submit their oral assignments, the reason why students thought the Voice Recorder tool helped improve their listening skills and the Voice Email tool helped improve their speaking skills can also account for why the Voice Board tool was good for both their listening and speaking skills.

Also, like the other two tools, 85.7\% of the students agreed that the Voice Board tool was easy to use. Another potential benefit of the Voice Board tool mentioned by some students is its capability to generate a learning community where students can communicate and learn from each other. Unfortunately the instructor didn’t explore much of this potential in her class.

When asked how he would like to improve the use the Voice Board tool in this course, Student B answered that he always enjoyed the idea of having a dialogue over the Voice Board, “like over the semester maybe you would pair a group of 2 or 3 students, and then like one week one person would post their argument or something and then continue to have a dialogue over the rest of the semester. I think it would be especially useful for arguments in Chinese because it’s easy to make a certain statement but hard to develop it.” (Student B Interview, May 5\textsuperscript{th} 2007)
Student C’s response was “I’m a big proponent of discussion groups, because students can interact with each other and they can talk to each other and help each other. In that way students don’t have to flatter the teacher with emails and ask her questions, they can actually help each other. So it can make them more independent.” (Student C Interview, May 9th 2007)

**4.3 Research Question 3: What Were the Problems When Using Each of the Tools?**

**4.3.1 General Technical Problems When Using Each Wimba Voice Tool**

Responses from both student survey and students’ and instructor’s interviews indicate that students encountered some general technical problems when they used the Wimba Voice Tools for the first time in a computer lab. These problems were usually caused by the old version of Java or Internet browser. Normally students could handle these problems by themselves.

When asked about general technical problems, student C said there were some initial configuration problems on the older machines in the computer lab where he was learning Wimba. These problems were mainly due to the machines' age and the fact that they were running older version of the Windows operating system. After getting them configured, Wimba worked properly. Also, like most Java-based applications, the Wimba system took some time to start up the first time and would sometimes feel sluggish, especially on older machines. On newer machines, Wimba seemed to run smoother.

In response to the same question, a similar answer was received from student B. He replied when he and his classmates started to practice the Wimba tools in the computer lab for the first time, the computers there didn’t support Wimba very well. They didn’t have the right Java version and the right browser version, so it caused a lot of problems. Later when he was doing his Wimba assignments in other computer labs and was encountering similar
problems caused by the old Java or browser version, he would go online and install the latest version to make Wimba work well.

4.3.2 Problems Using the Voice Recorder Tool

When asked the disadvantage of the Voice Recorder tool, the instructor stated that once the new message was recorded, students did not have access to the previous recordings. This is because every time when the Voice Recorder tool was used to record, the previous recording would be deleted automatically.

Student C also pointed out the same disadvantage. “New recordings made by the teacher would replace the older ones, so that if I hadn't downloaded the previous recordings, I'd be out of luck and wouldn't be able to hear them again.” He suggested that, “Perhaps such audio announcements should be in a chronological structure so that students can access previous recordings or find a recording from a certain date.” (Student C Interview, May 9th 2007)

Actually this problem could be solved by the instructor using the way that Student C suggested. If the instructor wants to archive every recording for students’ access at any time, she can set up different Voice Recorders for different announcements and use the setting date as the title for each announcement. Using the Voice Board tool to record and archive all the audio announcements can be another solution. In this case, one Voice Board tool is enough instead of many Voice Recorder tools.

4.3.3 Problems Using the Voice Email Tool

In terms of the problems when using the Voice Email tool, only one issue was identified by the students. Both Student B and C commented in their interview that the Voice Email tool did not have a “save” option.

Student B wanted to have a copy of his recording when he was submitting his assignment to his instructor. While Student C wanted to make, save and listen to multiple
recordings, and then select his favorite one to submit. But the Voice Email tool did not provide the function of either saving recordings or uploading external audio files. So Student C had to rerecord until he was satisfied. He remarked “Sometimes it was annoying for me, because when I was recording, I may make mistakes, and I would record it again. When I rerecorded it, the previous recording would be erased which means maybe I did worse the second time but I couldn’t go back to the first one. So something I would like to see is the ability to make and save multiple recordings, and then I can listen and compare. Another短coming of this tool is that it doesn’t allow you to upload your own recordings. If I want to use my own software to make several recordings, I can’t upload a saved audio file to the Voice Email.” (Student C Interview, May 9th 2007)

As far as I know there’s no solution to Student C’s “save” problem. But in Student B’s case, he can now send a voice email to the instructor and himself at the same time. This function was not allowed by the old Voice Email tool but was made possible by the new version.

4.3.4 Problems Using the Voice Board Tool

Although 87.5% of the students agreed that Voice Board tool was easy to use, it seems that they didn’t like using this tool much. Sixty-two point five percent of the students neither agreed nor disagreed that they enjoyed this tool and even 12.5% strongly disagreed this statement. Results from students’ interview and online survey open-ended questions indicate that there were two reasons for this problem.

First, since the Voice Board tool was a public place where everybody could see and hear what was written and said, some shy students were not willing to be heard.

When asked about the disadvantages of using Voice Board, student A said it was a little embarrassing to post his oral assignment on the board, because he thought everybody in class could listen to his message. He didn’t want others to hear his voice. because he felt it
weird and was not confident in his pronunciation. Instead of letting everybody in class listen to his recording, he preferred sending a private voice email to the instructor.

Like student A, student B also felt better about submitting his assignments via Voice Email than posting it on the Voice Board, because he was scared to let others hear his assignments. He mentioned that there were many different levels of students in his class. He felt the people with native background spoke much better than non-native speakers like him. He was intimidated by that and thus didn’t want to share his reading with his classmates. This finding is the same as McIntosh, Braul & Chao’s report (2003) that some students did not feel comfortable posting their voices on line for others to listen.

The other reason is the disorganization of the instructor’s use of the Voice Board. Sometimes students were confused about where to submit their assignment, whether in the Voice Email or in the Voice Board, even in the Voice Board, they didn’t know in what order their postings should be put. “There was confusion among many students about whether to post our audio recordings in the Voice Board or just email them to the teacher via the Voice Email. The system needs to be such that it is clear to the students where to go to turn in certain voice assignments.” (Student A Interview, May 3rd 2007)

When asked about suggestions for improving the use of Voice Board, student B said it would be nice to have the conversations on the Voice Board categorized. He reported that sometimes when he was trying to find certain assignment instruction on the Voice Board, it was hard to navigate and figure out what each posting was by only looking at its title because all the postings were named in similar way. He thought if there was a specific folder that responses were restricted to, it would make much clearer for the students to know where to post their recordings and also it would keep postings more organized.

Student C also pointed out the disorganization problem of the Voice Board. He said “The organization of the discussion threads wasn’t easy to figure out what to do with it.” (Student C Interview, May 9th 2007) He suggested there be a section or a topic devoted to
each assignment. That could make it easier for students to know where to post different recordings.

In the online survey, one student’s suggestion for improving the use of the Voice Board was “I feel it would be easier and less confusing for students to use if you combine the Wimba tools together.” However she didn’t explain what the combination would be like.

### 4.4 General Discussion

In this section, the major findings of this action research will be summarized and the strength and weakness of each tool will be discussed. Some improved ways of utilizing each tool will also be suggested in the end.

Overall there are four major findings from this study. First, both the instructor and students perceived that students’ listening and speaking skills had been improved after participating in the language learning activities supported by the Wimba Voice Tools. Language activities using Wimba provided students with more opportunities to practice their listening and speaking skills. It was found that non heritage students benefited more from these listening and speaking activities than heritage students because unlike the heritage students who could listen to and speak Chinese with their parent(s) after class, non heritage students usually didn’t have much access to native Chinese speakers. By participating in the language learning activities supported by Wimba, these non heritage students could communicate with their instructor in Chinese any time after class.

Second, the use of the Wimba Voice Tools generated positive responses from both the instructor and the students. The instructor and the majority of the students stated that they enjoyed using this user-friendly technology. When asked whether they would like to teach or take another language course using Wimba, all of them expressed their willingness to do so.

Third, the use of the Wimba Voice Tools motivated the students to spend more time practicing their target language. In order to understand what the instructor said or copy how
she spoke, students usually listened to her recordings many times. In order to submit a satisfactory recording assignment, students usually practiced speaking a lot before their final submission. This finding agrees with what McIntosh, Braul and Chao reported in their research (2001). In addition, the fact that students spent more time listening and speaking Chinese indicates that Wimba activities fostered greater learner autonomy. This potential was reported as one of the positive features of CMC technologies in Belisle’s (1996) and Warschauer’s (1996) research.

Fourth, the use of the Wimba Voice Tools changed the way the instructor taught and the students learned Chinese. Before Wimba was introduced, Chin 301 was mainly a reading and writing class. Students usually practiced listening and speaking in class. After class the students, especially those non heritage ones, seldom listened to and spoke Chinese. When Wimba was available at ISU, the instructor designed more listening and speaking activities using the Voice Tools. These learning activities were usually conducted after class, thus the students practiced listening to and speaking more often than before. In addition, the instructor offered individual student more one-on-one instruction outside of class, such as giving comments on student’s oral assignment via Voice Email.

In this study, it was found that each Wimba Voice Tool has its own strength and weakness. Results from the study show that the Voice Recorder tool was perceived as effective in improving student’s listening skills. The recorded instruction for assignments via this tool provides students more opportunities to listen to the target language after class and also forces them to practice listening until they can understand the assignment requirement. One issue with this tool is that if only one Voice Recorder tool is used, the newly recorded instruction will replace the previous one and students lose the access to the previous recording permanently. One way to solve this problem is that the instructor can tell students that the Voice Recorder tool allows them to save recordings which means every time when a new recording comes up, they can save the audio file to their computer so that they can listen
to it whenever they want and they even do not need to log onto the WebCT course. Another possible solution is that the instructor may create multiple Voice Recorder tools. One Voice Recorder is used to record one assignment instruction and all the recorders can be arranged in chronological order.

Results from this study also suggest that the Voice Email tool was perceived as effective in improving student’s speaking skills. This tool makes student’s submission of oral assignments possible and easy. When students were required to submit their recordings, they practiced reading and speaking more often after class. Normally it is not possible that every student can read or speak the target language in class, and then the instructor can correct everyone’s pronunciation error accordingly. But the Voice Email tool extends the class time and allows the instructor to listen to students’ speaking practice at any time. Students can also receive the instructor’s comments on their speaking individually and privately. However if students want to have access to their submitted recording, they have to send themselves a copy when submitting the assignment.

The Voice Board tool not only allows the instructor to record, it also allows students to submit their oral assignments. It combines the features of Voice Recorder and Voice Email. So this tool was perceived as effective in improving both students’ listening and speaking skills. If the Voice Board tool is used to record the instructor’s voice, it can do better than the Voice Recorder tool, because the instructor only needs one Voice Board where he/she can post all the recordings so that students can access any recording at any time in just one place. If it is used to submit students’ oral assignments, the instructor shall keep in mind that some students do not feel comfortable letting classmates hear their voice; in this case, the instructor may consider setting it as a private Voice Board where students can only view the instructor’s and their own postings. Also a Voice Board can be a public place where students can communicate with each other either in voice or in text. If the instructor would set it as an informal place to practice their target language, I believe more students will be
willing to speak out. One important issue regarding using the Voice Board tool is that the
instructor has to make the board well organized so that students will not feel confused about
how to use it. It’s better for the instructor to give every main thread a sensible name so that
students can easily figure out where they should post their responses. For example, the
instructor can make an assignment instruction as a main thread and name it as “Week One
Assignment: Introducing yourself”. When students see the title, they know that they should
record and post their self-introduction under this thread.

Another important and useful feature of the Voice Board tool that I want to
recommend is that the instructor may import external audio files to the board. If the instructor
has an inventory of good listening materials like songs, interviews, stories or textbook
readings, he/she can upload them to the Voice Board and share with students. But these audio
files must be in mp3 format.

After this study, I feel more confident in introducing the Wimba Voice Tools to ISU
foreign language instructors. I can not only mentor them on how to use the new technology,
but also suggest how to integrate each voice tool in their language teaching to help improve
their students’ language skills. With more specific examples, I believe more and more ISU
language instructors will be interested in and are willing to try Wimba. If I have the chance to
teach language again and have access to audio technology like Wimba, I’m sure to integrate
it in my teaching and continue to conduct research on it.

The feedback from the survey, the students’ and the instructor’s interviews indicates
Wimba is a useful medium in the language learning process. More research is needed in the
future to explore the relationship between students’ improvement on language competences
with the integration of this technology and to identify any factors that may facilitate or hinder
students’ language learning with each Wimba Voice Tool.
# APPENDIX A. DOCUMENTATION OF HUMAN SUBJECTS APPROVAL

## ISU NEW HUMAN SUBJECTS REVIEW FORM

### SECTION I: GENERAL INFORMATION

<table>
<thead>
<tr>
<th>Principal Investigator (PI):</th>
<th>Phone:</th>
<th>Fax:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lingli Yao M.Ed.</td>
<td>515-708-5703</td>
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<td><a href="mailto:lyao@iastate.edu">lyao@iastate.edu</a></td>
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**Title of Project:** "A complete language learning environment" - A case study of ways of using the Winba audio technologies to supplement traditional second language teaching

**Project Period (Include Start and End Date):** 04/09/07 to 04/09/07

### FOR STUDENT PROJECTS

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<tr>
<th>Name of Major Professor/Supervising Faculty:</th>
<th>Signature of Major Professor/Supervising Faculty:</th>
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<tbody>
<tr>
<td>Dr Ann Thompson</td>
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<th>Phone:</th>
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<tbody>
<tr>
<td>515-294-5287</td>
<td>N081 Lagomarcino</td>
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<td>☑ Research</td>
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<tr>
<td>☑ Independent Study (490, 590, Honors project)</td>
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### KEY PERSONNEL

List all members and relevant experience of the project personnel. This information is intended to inform the committee of the training and background related to the specific procedures that the each person will perform on the project.

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<tr>
<th>NAME &amp; DEGREE(S)</th>
<th>SPECIFIC DUTIES ON PROJECT</th>
<th>TRAINING &amp; EXPERIENCE RELATED TO PROCEDURES PERFORMED, DATE OF TRAINING</th>
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<tr>
<td>Lingli Yao M.Ed.</td>
<td>Principal Investigator</td>
<td>ISU Human Subjects Training March, 2006</td>
</tr>
<tr>
<td>Dr Ann Thompson, Ph.D.</td>
<td>Major Professor</td>
<td>ISU Human Subjects Training</td>
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APPENDIX B. STUDENT SURVEY QUESTIONS

1. Are you male or female?
   ____ Male       ____ Female

2. How old are you?
   ______________

3. Are you of Chinese heritage?
   ____ Yes       ____ No

4. How long have you studied Chinese?
   ______________________

Voice Recorder is a tool which can be used by the instructor to record his/her voice and provides the opportunity for students to listen to the instructor’s recording. In Chin 301, Voice Recorder was named “Ting Shuo Xun Lian”. You used it to listen to the assignment instructions which were recorded by Dr. Mu.

5. This tool helped my listening skills.
   A. Strongly disagree   B. Disagree   C. Neutral   D. Agree   E. Strongly agree

6. This tool helped my speaking skills.
   A. Strongly disagree   B. Disagree   C. Neutral   D. Agree   E. Strongly agree

7. I feel more confident speaking in class after I have used this tool.
   A. Strongly disagree   B. Disagree   C. Neutral   D. Agree   E. Strongly agree

8. This tool is user friendly.
   A. Strongly disagree   B. Disagree   C. Neutral   D. Agree   E. Strongly agree

9. I enjoy using this tool for the course.
   A. Strongly disagree   B. Disagree   C. Neutral   D. Agree   E. Strongly agree

10. What do you like best about this tool?
    ________________________________________________
11. What do you like least about this tool?

_____________________________________________________________________

12. What other suggestions do you have for improving the use of this tool?

_____________________________________________________________________

Voice Board is a threaded discussion board where users can record and post audio messages as well as text messages. In Chin 301, Voice Board was named "Ting Shuo Yuan Di". You used it to record your answers to Dr. Mu's three questions: "Have you contacted your partner? How did you contact him/her, via email or phone? Which language did you use, English or Chinese?" You also used it to post your opinion about which group's Teapot dialogue was the best.

13. This tool helped my listening skills.
    A. Strongly disagree  B. Disagree  C. Neutral  D. Agree  E. Strongly agree

14. This tool helped my speaking skills.
    A. Strongly disagree  B. Disagree  C. Neutral  D. Agree  E. Strongly agree

15. I feel more confident speaking in class after I have used this tool.
    A. Strongly disagree  B. Disagree  C. Neutral  D. Agree  E. Strongly agree

16. This tool is user friendly.
    A. Strongly disagree  B. Disagree  C. Neutral  D. Agree  E. Strongly agree

17. I enjoy using this tool for the course.
    A. Strongly disagree  B. Disagree  C. Neutral  D. Agree  E. Strongly agree

18. What do you like best about this tool?

_____________________________________________________________________

19. What do you like least about this tool?

_____________________________________________________________________

20. What other suggestions do you have for improving the use of this tool?

_____________________________________________________________________

Voice Email which was named "Ting Shuo Dian You" in Chin 301 is the most frequently used Wimba Voice Tool in this course. You used it to record your textbook readings such as "Chinese night market" and "Religions in Taiwan". You also used it to record your own written story "Moon Lady".

21. This tool helped my listening skills.
   A. Strongly disagree   B. Disagree   C. Neutral   D. Agree   E. Strongly agree

22. This tool helped my speaking skills.
   A. Strongly disagree   B. Disagree   C. Neutral   D. Agree   E. Strongly agree

23. I feel more confident speaking in class after I have used this tool.
   A. Strongly disagree   B. Disagree   C. Neutral   D. Agree   E. Strongly agree

24. This tool is user friendly.
   A. Strongly disagree   B. Disagree   C. Neutral   D. Agree   E. Strongly agree

25. I enjoy using this tool for the course.
   A. Strongly disagree   B. Disagree   C. Neutral   D. Agree   E. Strongly agree

26. What do you like best about this tool?
   ______________________________________________________

27. What do you like least about this tool?
   ______________________________________________________

28. What other suggestions do you have for improving the use of this tool?
   ______________________________________________________

29. Did you encounter any technical problems when you were using any of these three tools? If yes, what are the problems?
   ______________________________________________________

30. Would you like to take another course that uses the Wimba Tools?
   ____ Yes   ____ No
APPENDIX C. STUDENT INTERVIEW QUESTIONS

1. What do you think the difference is between Chinese 301 and other Chinese courses you’ve taken?

2. How did you learn to use each Wimba Voice Tool? Do you think they are easy to learn or not?

3. Have you encountered any technical problems when using any of the three Wimba tools? If yes, what are the problems?

4. Usually, Dr Mu recorded some assignment instructions using “Voice Recorder” (Ting Shuo Xun Lian), do you think this tool is helpful in terms of improving your listening and speaking skills? Why or why not?
   - What do you like least about this tool?
   - If you were the instructor, how would you like to use this tool?

5. Sometimes Dr Mu required you to record your textbook reading using “Voice Email”, she also limited the maximum length of the recordings. How many times did you usually practice reading before you sent your recording?
   - What do you think the benefits of using this tool are?
   - What do you like least about this tool?
   - If you were the instructor, how would you like to use this tool?

6. In “Voice Board”, both the instructor and the students can record their voices and post their audio and text messages.
   - What do you think the benefits of this tool are?
   - What do you like least about this tool?
   - If you were the instructor, how would you like to use this tool?
7. How do you think the use of the Wimba Tools affected your Chinese language learning?
8. Would you like to take another course that uses the Wimba Tools?
APPENDIX D. INSTRUCTOR INTERVIEW QUESTIONS

1. Could you tell me about your past and present teaching experiences?
2. How did you know and learn the Wimba Voice Tools? Do you think they are easy to learn?
3. Could you describe your Chin 301 class?
4. How did you teach it before you knew the Wimba Voice Tools?
5. How did you teach differently when you used the Wimba Voice Tools?
6. How do you think this change the students experienced in your class affected their language learning?
7. What’s the advantage of using Voice Recorder?
   What’s the disadvantage of using this tool?
8. What’s the advantage of using Voice Email?
   What’s the disadvantage of using this tool?
9. What’s the advantage of using Voice Board?
   What’s the disadvantage of using this tool?
10. Have you and your students encountered any technical problems when using the Wimba Voice Tools? If yes, what are the problems?
11. Did your students complain about the Wimba Voice Tools? If yes, what are their complaints?
12. What other information do you have after experience?
13. Are you willing to use the Wimba Voice Tools again in the future?
14. Do you have additional comments?
REFERENCES


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I would like to take this opportunity to express my thanks to those who helped me with various aspects of conducting research and the writing of this creative component. First and foremost, I would like to thank Dr. Ann Thompson for her guidance, patience and support throughout this research and the writing of this thesis. Her insights and words of encouragement have often inspired me and renewed my hopes for completing my graduate education. I would also like to thank my committee members for their efforts and contributions to this work: Dr. Denise Schmidt and Dr. Volker Hegelheimer. I would additionally like to thank Dr. Schmidt for her inspirational teaching style and Dr. Hegelheimer for his guidance at the initial stage of my research. Finally, I would like to thank Dr. Julio Rodriguez, the Wimba project manager at ISU, for offering me the opportunity to conduct research on Wimba.