Expanding the content of curriculum: implementation of the World Wide Web into foreign language teaching

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Expanding the content of curriculum: implementation of the World Wide Web into foreign language teaching

Abstract
This study investigated the factors that impact the decisions to integrate the World Wide Web into foreign language curriculum. This inquiry involved a combined approach -- including a survey and a case study. The current status of the technology application in foreign language instruction at a state university in the United States was assessed through the survey. It revealed that integrating the Web was the least immediate concern of most foreign language professors due to their limited knowledge, their inadequate training, and their ambiguous attitudes. A case study of an innovator’s practice of integrating the Web in foreign language instruction was conducted in the laboratory school affiliated with the university. The case study indicated that positive attitudes and adequate background knowledge about the technology applications were necessary for the web integration.
Expanding the Content of Curriculum: Implementation of the World Wide Web into Foreign Language Teaching

A Graduate research paper
Submitted to the
Division of Educational Technology
Department of Curriculum and Instruction
in Partial Fulfillment
of the Requirements for the Degree
Master of Arts

UNIVERSITY OF NORTHERN IOWA

by

Ping Gao

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Implementation of the World Wide Web
into Foreign Language Teaching

has been approved as meeting the research requirement
for the Degree of Master of Arts.

September 24, 1999
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Table of Content

Abstract 1

Chapter I: Introduction 3
  Problem Statement 3
  Significance of Research 4
  Purpose of Research 5
  Limitation of Research 5

Chapter II: Literature Review 7
  Curriculum 8
  Objectives 9
  Authentic materials 11
  Technology 13
  Introduction about the Web 15
  Advantages of the Web 16
  Worldwide accessibility 16
  Multimedia learning environment 18
  Individualization and Student choice 18
  Challenges 19

Chapter III: Method-A Combined Approach: 22
  The Survey 22
  General study description 22
  Findings 25
  Ranking of most frequently used technology 25
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I also want to express my sincere appreciation to my family members and my friends both in China and the United States for their understanding and mental support.
Abstract

This study investigated the factors that impact the decisions to integrate the World Wide Web (the Web) into foreign language curriculum. This inquiry involved a combined approach—including a survey and a case study. The current status of the technology application in foreign language instruction at a state university in the United States was assessed through the survey. It revealed that integrating the Web was the least immediate concern of most foreign language professors due to their limited knowledge, their inadequate training, and their ambiguous attitudes. A case study of an innovator's practice of integrating the Web in foreign language instruction was conducted in the laboratory school affiliated with the university. The case study indicated that positive attitudes and adequate background knowledge about the technology applications were necessary for the web integration.

This study concluded that a teacher had to change his/her role simply from a technology user, to a web-site evaluator and editor, and a curriculum designer. The technology application should go beyond from as a teaching context into a teaching content. The successful integration of the latest technology relied on a teacher's idea changing: to transform the coverage of the content, teaching
strategies, and assessment of students' learning. It is recommended that the short-term technology-proficiency training without any follow-up support was not sufficient to ensure a teacher's integration of technology into curriculum. Professional development training was needed to connect technology training with teaching the contents. Team building and support were important elements in integrating the Web in foreign language instruction.
CHAPTER ONE

Introduction

As we approach the 21st century, the influence of powerful technology has pervaded all aspects of our modern life. Over the past few years, the latest technology applications—the Internet and the Web—have attracted the greatest attention of people around the world. The use of the Web is widespread in numerous fields and domains. Without a doubt, the Web possesses a great potential for educational purpose, particularly for foreign language instruction.

Problem Statement

The United States government has invested billions of dollars to have all schools equipped with computers and connected modern communications networks. It is estimated that cost varies from $50,000 to $120,000 to wire a school for full Internet access. This piece does not include annual maintenance and upgrade costs. Despite such huge investments, only 20 percent of the 2.5 million teachers currently working in the public schools feel comfortable using these technologies in their classroom (U.S. Department of Education, 1999). Although the Web is available to most teachers and students in American schools, not many students benefit from it. Even though
some teachers have been actively involved in developing many special classroom activities and collaborative projects based on the use of the Web, the vast majority of published work is descriptive of web implementation in classrooms (Butler, 1997; Cousie, 1998; Maddux & Johnson 1997). As Windschiltl (1998) points out that the literature stops asking critical questions, such as, whether these practices help students learn and if so, how. In terms of foreign language instruction, most literature only claims salient characteristics of the Web and its promise (Dillon & Zhu, 1997; Levy, 1997; Li & Hart, 1996; Pusack & Otto, 1997). Little research provides evidence to support the "effectiveness" claims. Limited research addresses how a teacher has to change his/her roles in integrating the Web into instruction.

This study is designed to investigate the reasons why a teacher wants to/does not want to integrate the Web into foreign language curriculum. It is aimed at investigating how to incorporate the full potential of the Web in foreign language curriculum. The study will focus on discovering teacher change, the choice of teaching content, authentic assessment of students' learning and other related issues.

**Significance of Research**

The significance of this study is to combine the quantitative and qualitative research. The study moves
beyond collecting theoretical merits of the web in the foreign language teaching, toward focusing on understanding the complex aspects of the teaching and learning process related to successfully integrating the Web into foreign language teaching. This study explores the teachers' and students' knowledge and attitudes toward the Web, and examines the factors that influence decision making on technology applications. What has emerged from this study is the knowledge that a teacher has to acquire new skills and to change his/her role when he/she wants to implement the Web in teaching.

Purpose of Research

The main purpose of this study is to explore the factors that influence a teacher's decision making about integrating the Web into foreign language instruction. Therefore, the purpose of this study is threefold: 1) to investigate the factors and concerns that influence a teacher to make the decision to integrate/not integrate the web into his/her teaching 2) to explore how to maximize the potential of the Web to improve students' language learning; 3) to offer an innovative example to encourage other educators to adapt the Web in instruction.

Limitation of research

The finding of this study is based on a small scale survey and a short-term of qualitative study at a convenient
site. The combination of the two approaches in a short period of time limits the researcher to conduct a detailed investigation. A survey of a broader population and a long-term qualitative study are needed for the further study.
CHAPTER TWO

Literature Review

The literature review was to provide a theoretical foundation for understanding the special contributions of the Web in improving foreign language learning. Mueller's (cited in Bush, 1997) concept that the outcomes of education and learning are an intersection of areas related to the curriculum, the technology, the learner, and the teacher served a guideline for literature review.

---

**Learner**
- Skills
- Attitudes
- Assessment

**Curriculum**
- Objectives
- Syllabus
- Materials
- Integration

**Teacher**
- Preparation
- Attitudes
- In-service

**Technology**
- Information Age
- Costs/Obstacles
- Future Potential
- Research Base

**Outcome**
In this study, the literature related to the areas of foreign language curriculum and technology applications in foreign language teaching had been intensively. The areas related to the teacher and the student have been further investigated in the later section of research inquiry.

Curriculum

Over the last few decades there has been a trend in language education. This trend has been moving away from studying about a language toward focusing on using a language as a tool for communication. One of the most exciting areas of such changes in recent years has been that of curriculum design, which moves from accuracy to proficiency, and from structure and form of language to communicative or discursive meaning (Hadley, 1993; Richards & Rodgers, 1986; Rivers, 1987; Savignon, 1972,). Hadley (1993) stresses that language proficiency is not a monolithic concept but a whole range of abilities that must be described in a graduated fashion in order to be meaningful.

It is strongly believed that the proficient skills of using a foreign language allows learners to access directly knowledge and information generated by other countries and to engage in face-to-face communication with people around the world. It is, therefore, highly recommended that learners should be
provided ample opportunities to practice and to use language in a range of context and a range of functions (tasks). It is widely accepted that teachers need to provide various forms of instruction and evaluative feedback, so learners can learn the language more effectively.

Objectives

The unique contribution of foreign language study is to expand students' personal experiences of their environment, to encourage students to become truly humanistic and to obtain a new dimension of their thinking, and to break through monolingual and monocultural bonds (Rivers, 1986). So the study of foreign language must foster intercultural understanding and tolerance, define oneself and promote a better understanding of one's own culture and the world (Evans & Gonzales, 1993).

The five goal areas: five Cs--Communication, Connections, Cultures, Comparisons and Communities--in foreign language learning have been identified in the lately published Standards for Foreign Language Learning: Preparing for the 21st Century (American Council of Foreign Language, 1996). The culture skill has been identified as a new skill, which is regarded to be as important as the other four skills: listening, speaking, reading and writing.
As culture is subsumed in a rage of variables which affect successful foreign language learning, various educational research projects have called attention to the uniqueness of culture and its inseparability from language (Byram, 1989; Byram & Estray- Sarries, 1991). As the new perspectives about effective language teaching and learning are developed, the concept of students as lifelong learners will influence educators to broaden language curricula with an eye toward development of critical thinking skills in a multidisciplinary context (Pusack & Otto, 1997). As curricular goals are expanded to prepare language learners to attain communication competency and to develop cross-cultural insight and strategies for effective communication with other people, foreign language educators have engaged in finding the best methodology to teach foreign language more effectively for many years. One of the major trends in pedagogy reflected in foreign language literature has been a shift in emphasis from teacher-dominated instruction to student-directed, student-centered approach.

Most foreign language educators agree that learning and practicing language in meaningful contexts is more appealing to both students and teachers than learning isolated bits of language through extensive memorization and drill. Within the past four decades, the Communicative approach has been well accepted (Murray, Morgenstern & Furstenberg, 1989; Richards & Rodgers, 1992; Whiteley,
1993) and the content-based instruction has been widely applied (Hadley, 1993; Stryker & Leaver, 1997) in the foreign language field. From the perspectives of these new approaches, language is seen as a negotiable system of meaning. This meaning is expressed and interpreted via the social interaction of reader and text, or between speakers in a culturally coded situation rather than as a closed system of formal lexical and grammatical rules. So developing the learners' communicative competence—the ability to communicate with native speakers in real life situation—is well recognized. Spolsky (1978) stresses that the authentic interpersonal communication can not be separated from the cultural, paralinguistic, and nonverbal aspects of language. Foreign language study has become more than a mere linguistic enterprise but as a social, cultural, historical adventure, because it is the study of language as social practice (Kramsch cited in Krueger & Ryan, 1993).

Language is experienced in the real world in many ways—orally and written, formally and informally. This means that important goals for language learners extend well beyond merely acquiring knowledge of the formal aspects of the language. Such, authentic material is one of main focuses of foreign language learning.

**Authentic materials**
Currently, many teachers of foreign language believe that authentic documents—any type of text, graphics, video, audio, and the alike, taken from the target culture that is produced by native speakers—can provide an appropriate context for language practice. Rivers (1987) argues that authentic texts give students direct access to the culture and help them use the new language authentically for meaningful communication purpose rather than for demonstrating knowledge of a grammar point of a lexical item. Stryker & Leaver (1997) further imply that the effective use of authentic language and texts has been a powerful force in propelling students to higher level of foreign language proficiency, and increase self-confidence, which in turn leads to gain in motivation and achievement.

It is strongly suggested, therefore,

...students should be given ample opportunities to explore, develop, and use communication strategies, learning strategies, critical thinking skills and the skills in technology, as well as the appropriate elements of the language system and culture (American Council of Foreign Language, 1996, p.28).

It is believed that the escalating development of technology provides a high promise for effective teaching. So taking increasing advantage of new technology advances, such as the Internet and the Web,
has been specifically recommended in the new standard. The value of the Web in language classroom to help students strengthen linguistic skills, establish interactions with peers, and learn about contemporary culture and everyday life in the target country has been widely recognized. No other media can compete with the Web for offering more student-centered, communicative approach-oriented, proficiency-focused, and cost-effective possibilities for direct contact with the target language and culture.

**Technology**

The field of foreign language education has always been in the forefront of the use of technology to facilitate the language-acquisition process. There are two main stages of technology applications in foreign language instruction (Armstrong & Yetter-Vassot, 1994).

The first stage is the traditional (audio) language laboratory approach of the 1950s while instructional emphasis was placed on the dissemination of auditory input. The laboratory activities were grounded in a stimulus-response behavior pattern. The teacher monitored the interaction. Technology application in this stage has been blamed for reducing the motivation of students for learning a language.
The second historical stage is the use of current technology developed from the mid-1970s with an emphasis on the language learning context. An array of instructional technologies including television, video, satellite broadcasts, and more recently computer-assisted language learning (CALL) has been applied. Levy (1997) defines computer-assisted language learning (CALL) as "search for and study of applications of the computer in language teaching and learning" (p.1). In the 1970s, the early conceptual stage of CALL was to transfer existing textbooks to computer-based applications. In the 1980s, computers were hailed as the tireless taskmaster, allowing the foreign language student endless opportunities to obtain nonjudgmental drill and practice. In 1990s, a variety of computer applications, such as vocabulary, grammar, and pronunciation tutors, and writing and reading programs are available. The evolution of the Internet has led away from focusing on basic linguistic practice towards incorporating culture and real life simulations.

As the World Wide Web is the latest in a series of technology innovations for education, it has more advantages and potential to affect foreign language instruction when comparing it with the other forms of technology.

In order to understand the role of the Web, it would worthwhile providing a brief introduction about the Web, to
present advantages and costs in foreign language learning, and to explore possibilities.

**Introduction about the Web**

Basically, the Web creates a geographically distributed pool of information by marrying two new technologies: hypermedia for nonessential access to multimedia information and the global nexus known as the Internet or other networks, which are capable of scouring a world wide network for information searching (Pfaffenberger, 1995). To a certain extent, the World Wide Web can be simply defined as a hypertext/hypermedia information and communication system on the Internet.

Pusack and Otto (1997) describe that hypertext is the concept of the network of different documents cross-referenced via hyperlinks, which are words or phases in one documents that point to another text with more information related to that word or phrase. They further explain that hypermedia, a blending term of multimedia and hypertext, is characterized by links to other media document-audio, video, graphics, or text. The strength of multimedia is in synergy derived from presenting content using a variety of modalities that can reinforce each other and that are linked together in meaningful ways to provide an in-depth learning experience (Pusack & Otto, 1997).
Advantages of the Web

As the Internet is fast emerging, the World Wide Web is becoming an increasingly powerful, interactive, and dynamic medium for delivery instruction. Li and Hart (1996) remark that the ease with which the Web can be reached, as well as the worldwide accessibility, multimedia capacities and interactive functions, makes the Web an attractive environment for carrying on computer-based instruction.

"The World Wide Web had become not only a boundless, but also a boundary-less resources for all users" (Moehle-Vieregge, James & Chuffee, 1997, V). Foreign language learners and teachers have discovered the Web's value as an educational resource and instructional tool with a huge amount of possibilities. It is predicted that the Web will revolutionize instruction and dramatically improve the effectiveness of education (Madux, Johnson & Willis, 1997). If the Web is to live up to its promise, educators must strive to understand the basic dimensions that the Web can and can not accommodate.

Worldwide accessibility

The greatest benefits of the web are its easy access and the quantity of information available through it. There are many online reading and writing aids (dictionary, grammar and notes) with a variety of writing styles and cultural issues addressed. A growing number of sites are
especially designed to foster listening and speaking for authentic language. All of these sites provide a wealth of language education materials.

The Web has bridged the gap of time and physical distance through asynchronous (not real time) and synchronous (real time) communications. The computer network makes it possible for students to initiate direct dialogue with their counterparts worldwide, and the Web offers foreign language students virtual immersion experiences (Kurshan, Isler & Blackburn, 1997) by providing them with easy access to current information from countries around the world.

As the foreign-speaking world can be easily brought into the classroom, students are motivated by both authentic experiences with the language and by the prospect of gaining skills that might have a practical application for them (O’Malley and Chamot, 1993). Students can perform collaboration in cross-cultural Internet projects: such as data gathering, reporting, and discussion groups, in the most effective way for foreign language students to learn and to retain what they experience (Warschauer, 1996). The excitement of learning through "real life" exploration integrates technology into the foreign language classroom in a direct, functional way. Students can benefit from expanding their technical expertise in hands-on activities.
In addition, communicative activities provide engaging opportunities for students to acquire the target language. As students experience different information-gathering strategies, they become active participants in the student-centered learning environment.

**Multimedia learning environment**

It has become an educationally commonplace to acclaim that learning is maximized when a combination of different modalities is used (Cornell & Martin, 1997; Grabinger, 1997; Mergendillaer, 1996). Warschauer (1996) remarks that multimedia learning can motivate learners to be more intellectually engaged in interacting with complex mediated programs that present language and culture in context. As the Web has put a great amount of information resources at our fingertips—texts, statistics, graphic, sound, video and virtual libraries are just a mouse click away. Students are surrounded by a multiplicity of language source-videos, still pictures, audio, graphics, text—which can be used to see, hear and read the language simultaneously. It is widely accepted that a multimedia learning environment on the Web can inspire the students to engage in the full possibility of active learning.

**Individualization and Student choice**

Tomei (1997) indicates that "From a pedagogical viewpoint, the greater a learners' autonomy, the higher the
level of active learning that can be successfully employed" (p, 56). With access to the Web, students have a choice of content, time, resources, feedback and a variety of media for expressing their understanding. Students then can select their own paths to knowledge to meet their own learning styles. The Web has the potential to help students confront and comprehend material more effectively by offering alternative or redundant presentation modes to match learner preferences and needs. Lessons that include appropriate reading and writing activities, along with supporting information, can teach students to cope more effectively with the difficulties that they typically encounter when reading a text in a foreign language.

For instance, Cononelos & Oliva (1993) have such a finding when using E-mail, students became more and more concerned with the quality of their writing when they were communicating via the network to distance audiences, especially with the native speaking pen pals. When students responded to the comments of others simultaneously, they assumed responsibility for their own learning.

Challenges

Current technology is transforming the world at a pace previous unknown. Information about technology, and skills in using it, are increasingly being recognized as foundational to in the process of learning and teaching.
The latest technology application—the Internet and the Web—have the potential of challenging the fundamental notion of educational content delivery and educational event participation.

The main challenge for educators and students with an access to the Internet is a shift from how to getting enough information to how to surviving with an overloaded but unstructured collection of information on the Web. Without skilled facilitation, many students who access current knowledge webs are confounded in a morass of unstructured data. It is easy for students to be "lost in hyperspace" while working in an overwhelming multimedia environment. Hill (1997) finds that students have the capacity of accessing materials over time, and as such, they can also engage in activities over time. This can lead to feelings of a lack of overall cohesiveness, presenting a considerable challenge for establishing themes for interaction and discussion.

The second challenge, the fast development of technology has caught many educators unprepared. "Technology anxiety" seems a natural reaction of teachers lacking necessary technological skill, inadequate training, limited support, and a philosophical conflict resulting from an individually held theoretical view of teaching and learning (Maddux, Johnson & Willis, 1997). Teachers have to accept the fact that many of their students may have more
technological competence than what they, themselves, possess. As students easily take more and more control of accessing information on the Web, they may learn a great deal about topics of which their teachers have little or no knowledge. Teachers may find themselves as partners in their students' learning, and may find themselves in the position of upgrading their own knowledge and becoming role models as life-long learners.

In sum, if an instructor understands how to overcome the limitations of the Web to design teaching activities more carefully, there is no doubt that the Web has great potential to enhance language teaching and learning. Since the Web has so many specific advantages for language teaching and learning, without any doubt, it should be applied in foreign language instruction.
CHAPTER THREE

Methods: A Combined Approach:
A Survey and a Case Study

In order to know the current status of technology applications in foreign language instruction at a medium-sized state university, a cross-sectional survey was conducted. A Case study was initiated after the survey at a laboratory school affiliated with the university. The qualitative research approaches—participant observation and interview were employed in the case study. The following is the detailed description of each approach.

The survey

General study description

The purpose of the survey attempted to get a clear picture of the current status of technology applications in foreign language education at the university. The specific focus was to investigate the attitudes of professors and students toward the web. It was assumed by the researcher that computers would be the most popular technology application in curriculum in the United States. Considering the following three facts: 1) All professors on campus have been equipped with computers with the Internet access; 2) All students get free access to computers connected to the Internet on campus; 3) Free technology training is available for the faculty and students, and the topics of
the training are circulated on a monthly basis, the hypothesis for this survey was that the easy access to the Web led the faculty and students to take the advantage of the Web to enhance their teaching and learning.

This survey was both descriptive and explanatory in nature. The descriptive aspect of the survey was to understand the relationship between the independent and dependent variables. The independent variables were status (professors and students), types of technology use in classroom, amount of time of using technology, knowledge about the technology. The dependent variables were the attitudes and comfort of using technology. The parameters were means and proportions of each variable. The explanatory aspect of the survey was to investigate the factors that impact the technology application in the foreign language teaching and learning.

The survey instrument for this study was a questionnaire. The instrument was designed for quick completion by the respondent, providing checklists as well as opportunity for open-ended questions. These open-ended questions provided enough space for the respondents to convey their ideas and concerns.

The survey population was foreign language professors and students in the Modern Language Department at a post-secondary institution. The individual professor or the student was the unit of analysis and the unit of
observation. The design of survey sampling was simple random sampling with a rough weighting procedure. 10 professors of foreign language instruction and Teaching English as a Second/Other Language program (TESOL) were selected to participate in this survey. The questionnaires were sent to them through the campus mail.

Considering that there was a small population of students studying foreign language on campus, four classes of students engaged in foreign language learning and teaching were selected to answer the questionnaire. Students who were taking Second Language Acquisition in Teaching English as a Second/Other Language Program (TESOL) were selected to represent those who were interested in foreign language teaching. Students who were taking the Intermediate level Spanish course (Spanish) were chosen to represent the students who were studying foreign languages. The international students who were taking Intermediate Speaking and Listening course and Advanced Writing Course in Culture and International Study Program (CIS) were also selected.

After gaining the permission of the professors, the questionnaires were hand-distributed to 46 students who attended the classes at the end of the each class session. The students were invited to fill in the questionnaire on a volunteer basis. Among them, 9 students were in the TESOL
program, 13 in the Spanish class, 12 in the Speaking and Listening class and 11 in the Writing class.

Both professors and students were well informed that this survey was a part of a masters degree research paper. They were also assured of the confidential nature of their responses. Students were asked to drop their answered questionnaire in an envelope at the entrance of each classroom. Professors were asked to send the questionnaire back through the campus mail. The rate of feedback was 100%.

Findings

The following session is a descriptive narration of the finding for this survey. It is in the order of the questions being asked and the percentage of answers. The tables also offer a comparison of response between professors and students for each question.

Ranking of most frequently used technology

The first item of the survey asked professors and students to rank the five most frequently used technologies in the classroom. The most surprising finding was that the most frequently used technology in the language classroom still was the audio and video equipment, which were most popularly used in the 50s and 60s (Table 1.1). There was an obvious pattern that the professors' ranking of technology use was a direct match with the sequence for the
development of technology overtime. For example, more professors ranked the audio tapes as the first choice than students did. This is accordance with Cruickshank's (1990) finding that teachers tend to teach in the same way they were taught (1990). The students' ranking showed less direct correlation with the development of technology.

<table>
<thead>
<tr>
<th>Table 1.1 Rank the five most frequently used Technology applications in teaching and learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professors</td>
</tr>
<tr>
<td>Audio tape</td>
</tr>
<tr>
<td>video players</td>
</tr>
<tr>
<td>Overhead projectors</td>
</tr>
<tr>
<td>computer</td>
</tr>
<tr>
<td>E-mail</td>
</tr>
<tr>
<td>Web site</td>
</tr>
<tr>
<td>Internet</td>
</tr>
</tbody>
</table>

It is observable that the Web is the area of at least used by most professors and students in their language teaching and learning. Only one professor ranked the web-site as the fifth option of technology applications in the classroom, indicating that "I am still trying to learn how to set up a web-site and do something with it in my classroom" (Survey response, March, 1998).
The incredible advance of technology and its innovations catches most practicing teachers unprepared, as one professor wrote: "I am familiar with audio and video technology, but not very familiar with computers and their applications in the classroom. I really don't know what is available of computer and how to use it in the classroom" (Survey response, March, 1998). This finding indicates that teachers who have had no professional experience with computers were less knowledgeable about the application in the classroom.

Knowledge about technology

Manville (1996) defines knowledge as the capacity to solve problems, innovate, or otherwise create value on the basis of the previous experiences, skills, or learning. The successful application of knowledge to explain the way things work is an important criteria in the validity of knowledge. Research shows that having knowledge of computers influences teachers' attitudes toward computers and computer use (Mitchell and Taylor cited in Dupagne & Krendl, 1992).
Table 1.2 Knowledge of the application of technology

<table>
<thead>
<tr>
<th></th>
<th>Professors</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Something</td>
<td>50%</td>
<td>70%</td>
</tr>
<tr>
<td>A lot:</td>
<td>30%</td>
<td>20%</td>
</tr>
<tr>
<td>Very little:</td>
<td>20%</td>
<td>10%</td>
</tr>
</tbody>
</table>

It is evident that a small percentage (average 25%) of the participants in this survey knows a lot about the application of technology (no matter what kinds of technology they referred to). Fifty percent of professors self-evaluated themselves as knowing something about technology, meanwhile seventy percent of students self-evaluated themselves with the same status. Also 10% more professors indicated they know very little about technology when compared to their students. It is obvious that the younger generation, comparatively speaking, has more knowledge about technology because they are growing up in the technology-oriented world.

Professors lacking knowledge of technology convey that they feel less confident and have personal doubt towards the effectiveness of technology. As one professor indicated: "I have no idea how to effectively use computers for the classes I teach" (Survey response, March 24, 1998).

Only one professor indicated that he/she had a specific level of confidence in computer applications: "I
can use most software/hardware. Have some experience in developing software" (Survey response, March 20, 1998).

Frequency of using technology

Dupagne and Krendl (1992) remark that knowledge about technology has a positive impact on choosing technology applications. Not surprisingly, teachers who had no professional experience with computers were less knowledgeable about the application of computers in the classroom. The data collected from the survey shown in table 1.3 demonstrates that technology is not frequently used by these professors, although it is easily accessible to them on campus.

<table>
<thead>
<tr>
<th>Table 1.3 Frequency of teaching/learning through technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professors</td>
</tr>
<tr>
<td>Less often than once a week:</td>
</tr>
<tr>
<td>More often than once a week:</td>
</tr>
<tr>
<td>Always:</td>
</tr>
</tbody>
</table>

This situation invited complaints from the students. One student replied that: "In the classes in which I am a student, we rarely make use of technology" (Survey response, March 1998).
Another student commented: "I have worked mainly with cassettes recorders, VCRs and computers (student's work with the computer was mainly passive)" (Survey response, March 20, 1998).

The data also identifies that students make use of technology more frequently than their professors, which is in accordance with the previous finding that young people now are more skillful in technology use. There is evidence that the choice of using/not using technology largely depends on knowledge about it and the comfort with the application of it.

**Comfort with technology application**

Levy (1997) remarks that the rapid and continuing introduction of the new technology into education has outpaced the ability of the teachers.

<table>
<thead>
<tr>
<th></th>
<th>Professors</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes:</td>
<td>70%</td>
<td>90%</td>
</tr>
<tr>
<td>Not Sure:</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>No:</td>
<td></td>
<td>10%</td>
</tr>
</tbody>
</table>

The conclusion drawn from the data in table 1.4 is that the professors are less comfortable with technology
than their students. One professor responded to why he/she is not comfortable with technology with the following two reasons: "Lack of experience and lack of confidence in my ability due to ignorance". (Survey response, March 1998).

Another professor responded in more detail:

I am often not sure which technology to use for which purposes and how to use technology most effectively. I would like to know what computer technology is available that would be beneficial for my students. But I don’t know how to access the technology and implement it in the classroom... (Survey response, March 1998).

One student commented: "I’m unskilled in computer use because of numerous frustrating experiences. I approach the computer reluctantly" (Survey response, March 1998).

**A specific question about the Web**

The final question specifically was designed to clarify participants’ understanding of the WWW. Being asked them about the difference between the Internet and the World Wide Web, eighty percent of the participants responded with no idea. One professor even underlined the "the difference of the Internet and the WWW" by putting a huge questioning mark: "I can not quite understand the question" (Survey response, March 1998).
One student responded: "The world wide web refers to just HTTP, the Internet refers to the telnet, FTP and everything else related." (Survey response, March 1998).

Among 56 participants, only one professor, who indicated his intention to set up a web-site to teacher, answered "Yes" and explained his understanding in detail:

I'm not really sure about this, but the way I think of it is that the Internet consists of the information itself & (and) the place where the information is available. Whereas the world Wide Web is the means of accession and connecting the information available on the Internet. (Survey response, March 1998).

Summary of the survey

Keller (1983) uses two concepts: choices and effort to illustrate (a) the reasons a person approaches or avoids a task, and (b) how to design instruction to make a task more interesting. The finding of the survey indicates that lacking technology competency, lacking on-going preservice and inservice education for technology applications, lack of knowledge, and less confidence are the main obstacles for the professors to implement the Web in their instruction. Another factor is how to find the time to balance the overload of teaching assignments with learning new applications of technology. As one professor remarked:
"Another concern is the time it takes to learn computer programs and teach them to students" (Survey response, March 1998).

Although their own limitations prohibited them using the Web, most professors believed that technology holds great promise for language instruction. They chose, however, not to integrate the Web into their teaching practice immediately but wait. But being able to utilize available technology has become a necessity rather than a matter of choice, because our society and our students demand us to implement technology into our teaching and learning. The only way to learn to teach foreign languages with the Web is to do it.

A case study about a faculty member who had integrated the Web into foreign language teaching, became a necessary part of this study. The case study of an instructor teaching French and Spanish at the laboratory school affiliated with the university was initiated since it was the only case on campus where a teacher taught the foreign languages with the Web.

**A Case Study**

**General Introduction of the Case Study**

The purpose of this case study was to move from theoretical constructs to concrete applications of the Web
in foreign language teaching. This part of the study aimed to understand the following issues:

- What perception does a teacher hold when implementing the Web in foreign language instruction?
- What roles can an instructor play when integrating the Web in instruction?
- What skills are required for such implementation?
- How effectively can the web affect the outcomes of learning?

Glesne and Pushkin’s (1992) concept that the multiple-data-collection methods can contribute to the trustworthiness of the data was incorporated into the study. A triangulation of data sources which "involved the incorporation of multiple data sources, investigators and theoretical perspectives in order to increase confidence on research finding" (Debzin cited in Glesne and Peshkin, 1992, p.24) was employed in this case study. The two data gathering techniques dominating this qualitative inquiry were participant observation and in-person interviews. Constant interviews of the instructor were conducted and videotaped as well. Three classroom participation observations and one interview of two students were conducted and videotaped. These interviews were transcribed. In order to be fully prepared for the follow-up interviews, reflective notes were kept after each
interview and participant observation. The data was analyzed with the code themes: perception, attitudes, roles and concerns. The coded notes were arranged in the sequence of the code themes.

Themes

Butler (1997) states that:

...most experimentation with the World Wide Web in the classroom has been conducted by innovators, who are both technologically savvy and comfortable with the uncertainty of adapting a new technology to their situation...an individual often must have significant background information about applying technology in the educational setting. Consequently, these participants are most useful for other innovators. (p.417)

Dr. Smith¹, Head of Modern Language Department at the Laboratory School, can be regarded as such an innovator. He started with the CALL at the "drill and kill" stage by using the Apple II, and had gone through every step of technology application procedure. More than fifteen years of experience of CALL provided him with profound background of technology applications. He was also profoundly knowledgeable about emerging technology application. When the research was conducted, it was the third semester that he implemented the Web to teach French and Spanish.

¹ A pseudonym is used here to protect the confidentiality of the instructor.
Perception

Being asked why he chose integrating the Web into his instruction, Dr. Smith stated that no other technology applications could compete with the Web to retrieve and access authentic information on a variety of topics and provide information students find interesting. He mentioned that "if the students were given the choice to use, to see and to do in class, they would go to a computer and get on the web." He perceived that "the Web is a terrific resource for language teaching, and the Web is an addition to education" (Personal interview, May 2, 1998). Dr. Smith mentioned that with expending our objectives of learning foreign language, the web could meet the needs of the five goal areas of foreign language learning: communication, connection, cultures, comparison and communication. In addition, the Web had a great potential to develop students' five skills, especially for acquiring the cultural skills.

Dr. Smith explained that:

Students are excited to learn with color, sound, and animation. The web provides the opportunities for variety of reading materials and listening voices. There is no doubt that students are more motivated with the Web than other kinds of technology. Because motivation is the key to engage students in active
and effective learning and students enjoy very much learning with the computer (Personal interview, April 25, 1998).

Being asked how to integrating the Web into the foreign language instruction, Mr. Smith responded:

Today's Number 1 question is: How do you use it? How do you cooperate in your curriculum and also how do you evaluate what the students are doing? To find information and get information is very simple with the Internet. This goes back the curriculum design--how to use the web? What do you want students to search for? What specific information you ask your students to obtain?" (Personal interview, April 25, 1998)

Dr. Smith designed his 8th grade French curriculum with a combination of the individual assignment and a group effort. He made a contract for an independent study program with every individual student for eight weeks as one part of his instruction. Each student was required to use computers at least once a week to find interesting information on the Web and gave either oral/written reports about his/her research. In order to provide guides for students to use the Web more effectively. Dr. Smith always gave addresses of the web sites and asked his students to go into it and find the information needed to fill in blanks or answer questions.
The second requirement by the teacher was to involve his students in using the Web as the information resource for their collaborative project. Each week, Dr. Smith conducted one of his French classes in a computer lab. One of such lab sessions was observed and video taped. At the beginning of the class session, the students were assigned to make a detailed schedule for "A Four-Week Free Trip in France", which included time, places to visit, restaurants, hotels, activities and expense. This project was designed in order to help students practice the skills of obtaining necessary information by skimming French texts and briefly report their results of the activity in French, so that the students could gain familiarity with French in general and exchange information with each other in French.

In such a problem solving process, students were required to search out information, investigate within authentic (realistic meaningful, relevant, complex and information rich) context, to accept different interpretation. The students worked in the cooperative group to negotiate and to pursue, to clarify meaning, to request information in authentic French language. Utilization of such dynamic, generative learning activities involved the students to engage in high level thinking process analysis to integrate new knowledge with old knowledge. The students became the center of their own learning.
Dr. Smith changed his role far beyond dispensing information, giving tests and grading. He worked as a facilitator and mentor circling around the classroom and paying special attention to the individual students who needed assistance. Then for the next period of the class, individual groups gave a presentation in French about their respective plan in the normal classroom. The student progress was assessed in content.

Attitudes

Dr. Smith mentioned that some teachers still regard the computer as the electronic notebook, and most of his colleagues hold the same ambiguous attitudes toward the computer-assisted language learning in general and the Web in particular. Dr. Smith held a positive attitude toward the Web, which influenced his students to take the advantage of using the Web for language learning.

Dr. Smith was very comfortable with the experiences of integrating the technology into his instruction. "That is the advantage of working in the Laboratory school," Dr. Smith added. "The teachers are encouraged to try some new means of teaching". From his own experiences of integrating technology into his classroom, he had encountered experiences of success as well as failure. As an innovator, he was trying to combine all kinds of technology in his classroom teaching.
Dr. Smith mentioned that the greatest challenge today was that "the technology is altering the relation of teacher and students, as teachers are no longer the information presenter and authority any more, instead they become fellow learners with the students" (Personal interview, April 25, 1998). He added that

One of the best resources today is your student. Students today have computers at homes.... Sometimes young students know better than teachers about using the computer. So a student is a good resource of learning. (Personal interview, April 25, 1998)

Roles in integrating the Web into curriculum

Dr. Smith had in-depth knowledge of how to use a variety of technology applications, their advantages and limitations. He tried to explore the full potential of each application. He used E-mail and a chatline for his students to talk with other students in other schools. He was planning to use the CU-SeeMe software to allow his students and other students in the world to see each other on the camera screen. But for effective integrating the Web into curriculum, Dr. Smith's experience indicated that an instructor should go far beyond being a user.

Dr. Smith's years of experience as a software evaluator provided him the opportunity to collect more than
one hundred CD-ROMs. This led him to play a new role as a web-site evaluator and an editor.

When considering "the Web offers all types of issues and topics, some of these topics are not suitable for young students" (Personal interview, April 25, 1998), Dr. Smith provided some addresses of the web to let his students log on to find the interesting information after his evaluation. Because he realized that "Working in the multimedia environment is overwhelming, students often can not make control of their content" (Personal interview, April 20, 1998).

After taking a summer course about the web design, he developed his web site named "Hundreds of best sites for foreign language teaching." He mentioned that "I have been developing and continuing to work on my web site daily so that allows teachers to come in and find useful information in their instruction" (Personal Interview, May 20, 1998).

Under "Here is your menu for languages", he listed five foreign language menus, French, Spanish, German, Russian, Japanese and Chinese. Each menu had a large number of entries. For example, under his French Menu alone there were more than 160 links. These links not only provided linguistic information, but also offered cultural exposure.

Realizing that some of web sites were unsuitable for children and might cause various problems, he made a special site for kids and parents other than for language
purpose. After evaluating, he made a list of Smith's Star Sites. He also linked his e-mail address to his web-site so that he could receive the feedback of the visitors to his site. He received e-mail daily message discussing and sharing teaching experiences.

In addition, Dr. Smith was skillful as a web producer. He mentioned the reason to produce his own page was that "I can take easy control about what kinds of questions I am asking and what kind of resources I can get" (Personal interview, May 10, 1998). In sum, his web site could be used as an encyclopedia for foreign language teachers and learners.

Concerns

Being asked concerns for integrating of the Web into his teaching, he made the following comments.

First, the limitation of current Web applications in foreign language can not benefit the foreign language learners in the area of reading and writing skills. Although there were some web sites specially designed to improve listening and speaking skills of the language learners, such as, the Realplayer software provided the opportunities for the students to listen to the current news and music on the Web, there are software available, by which learners' voice can be recorded to be compared with the native speakers' utterances, the result was far
from satisfying. He predicted that "There will be Internet telephones to make international calls via the Web. As more and more video and audio segments come online, listening and speaking activities will gain more prominence" (Personal interview, May 10, 1998).

Second, the assessment of students' learning was relatively difficult. Dr. Smith provided such an example. Once the students were assigned to write a paragraph in French. One of his students pasted the text from the Internet and printed it to hand it as the assignment. So teachers should design lessons to assess the students' abilities through special activities.

Third, the equality of access into the Web was Dr. Smith's most important concern. Each week Dr. Smith's students had one class period of time using the computer lab. In his French and Spanish classroom, there was one computer with the access to the Web. Dr. Smith mentioned that "If there is only one computer for the class of fifteen students, not just the bright students but every student must have the opportunity to use the computer" (Personal Interview, May, 10, 1998).

The computer labs were open to students from 3:00-4:00 in the afternoon. Concerning the gap between the haves and have-nots, Dr. Smith specially designed some assignments to let those students who owned computers at home to find information for those who had not.
During classroom observation and the interview, it became obvious that students who owned computers at home were more likely to exhibit favorable attitudes toward the Web use in the classroom. The male student who volunteered to be interviewed owned a computer at home. He mentioned that he enjoys learning with the Web. When being given the option for free activities in the classroom, he approached the computer and engaged himself in navigating on the Web. During the time in the computer lab, he seemed to be very skillful with navigating through the information and often shared his information with his peers.

On the other hand, the female student hesitated to be interviewed. And she claimed before the interview, "You can not expect me to say something good about the computer". She said that he had no computer at home, so she had to rush between the classroom and the computer lab after class in order to finish her assignment. Indeed she had mixed feelings toward the Web due to her "too many frustrating experiences with the computer." She believed that the Web could improve her reading, writing and culture skills. Her remark supported the discussion of Armstrong and Yetter-Vasot (1996) that the Internet can be most effectively used as a way to improve students' reading and writing skills, as well as their cultural knowledge. Regarding listening and speaking skills, the female student preferred to use other kinds of technology, such as video discs, CD-ROM and
video. Talking about the project for the use of the Web, she mentioned her real traveling experience in France was quite different from a virtual traveling on the Web.

Being asked to make comments on effectiveness of teaching foreign language with the web, Dr. Smith indicated that little research had addressed such a topic, "since the Web is only in its infancy, it is too new to draw an immediate conclusion" (Personal interview, May 10, 1998). He told that he had not done enough research on this topic, either.

Dr. Smith stressed that he was teaching French and Spanish both with and without the Web. He mentioned no single pedagogy has won the hearts of the teachers and learners. It was the same with technology applications. "The effective technology application is not to isolate one kind of technology with another, but to combine the merits of each technology application to achieve the desired outcomes of teaching" (Personal interview, May 10, 1998).
CHAPTER IV

Conclusion

The use of instructional technology is more than installing and teaching computers in the classroom. It also involves the ideas of how to use technology. Seels and Richey (1994) define instructional technology as the theory and practice of design, development, utilization, management and evaluation of processes and resources of learning, including support systems and instructional materials and environments.

The Web, like any other innovation of technology application, can only be regarded as a tool to assist effective foreign language instruction. Although the Web can provide a huge amount of information resources, the information can not be transferred into knowledge until actions and decisions of learners and teachers have been taken. As Maddux and Johnson (1997) remark "the most certain is that any technology is only as good as the skills and the attitudes of the people who use it and the educational methods and strategies they devise and implement" (p.5).

Drawn from the survey and case study, the researcher considered the outcomes of foreign language learning, and added some new elements to Mueller's model. So a new graphic is developed.
What can be drawn from the case study is that the successful integration of the Web is transforming the coverage of the content, teaching strategies and assessment.
of students' learning. Integrating the Web into foreign language instruction is changing a teacher's simple role from a technology user to a complex role of web-site evaluator, editor, and producer. A teacher is challenged to acquire the knowledge and skills and become a role model of life-long learning. Administrative, technical and peer supports, and time are crucial aspects to impact the integration of the Web into teaching.

The primary recommendations emerging from this study are the following:

The result of the survey shows that providing access to the Internet and free computer training does not guarantee that educators will integrate the Web into curriculum. In addition to invest time and resources in inservice hands-on workshop training for faculty, the university policy makers should figure out a way to attract faculty to actively participate in such professional development training. The training will be more appealing to connect the Web with the subject area content of teaching. Faculty's concerns on the issues of time and the administrative, technical and peer support need to be considered, so that more faculty are willing to adapt the Web in instruction.

Considering that an educator needs to be shown by examples and strategies that the Web really will enhance their content teaching and students' learning, an
innovator, such as Dr. Smith, can serve as a role model to influence his peers to adopt the Web in their curricula. The innovators should be provided more time to engage in peer supporting and research conducting.

In sum, the myth of teaching foreign language with the Web relies on wisdom of teachers and learners when they implement technology, curriculum, and strategies to maximize the positive impact of language learning outcomes. What has emerged from this study is that the integration of the Web into foreign language teaching is more than an individual action, but a change process involving the commitment of teachers, students and administrators. It is important to know that changes take time, effort, and commitment from all of the parties involved, but it is strongly suggested that teachers need to start engaging in such a change process immediately.


Washington, D.C.: Association for Educational Communications and Technology.


Appendix

Survey of Educational Technology in Foreign language teaching/learning

This survey is intended to know the current status of technology application, specifically speaking, the World Wide Web implementation in the foreign language teaching and learning on campus. The data will be used as one part of the research paper for a graduate student. But you are assured for confidentiality. Please take less than five minutes to fill this questionnaire. Your cooperation is highly appreciated.

1. Please rank the five most frequently used technology application in your teaching/learning (1: most frequently use; 2: next: etc).

   1).
   2).
   3).
   4).
   5).

2. Please self evaluate your knowledge about technology application. Only circle one response.

   □ Know a lot
   □ Know some
   □ Know very little
3. Please indicate the frequency of teaching/learning through technology. Only circle one response.
   □ Always
   □ More often than once a week
   □ Less often than once a week

4. Please indicate your comfort with technology application in teaching/learning in the classroom? Only circle one response.
   □ Yes □ Not sure □ No
   
   If provide the detailed explanation for your choice. If you need more space, please write on the back of this paper.

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
5. Do you know is there a difference of the Internet and the www? Please check one option.

□ Yes □ No □ Not sure

↓

If yes, please explain in more detail.

_____________________________________________________________

_____________________________________________________________

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_____________________________________________________________

_____________________________________________________________

Please check

Professor ____________ Student ____________

Thank you for your cooperation.