Factors Affecting the Implementation of Instructional Technology in the Second Language Classroom

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BRIGHAM YOUNG UNIVERSITY

GRADUATE COMMITTEE APROVAL

of a thesis submitted by

Veronica Naimova

This thesis has been read by each member of the following graduate committee and by majority vote has been found to be satisfactory.

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______________________________  ______________________________
Date                                Michael Bush

______________________________  ______________________________
Date                                Ray Graham
As chair of the candidate’s graduate committee, I have read the thesis of Veronica Naimova in its final form and have found that (1) its format, citations, and bibliographical style are consistent and acceptable and fulfill university and department style requirements; (2) its illustrative materials including figures, table, and charts are in place; and (3) the final manuscript is satisfactory to the graduate committee and is ready for submission to the university library.

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Factors Affecting the Implementation of Instructional Technology in the Second Language Classroom

Veronica Naimova
Center for Language Studies
Master’s of Art

Various studies show that the use of instructional technology in university-level second language courses can improve and enrich students’ L2 acquisition and greatly motivate students to continue learning their target language.

In spite of such advantages, few instructors are integrating instructional technology into their lessons. This research investigates the main issues that affect the use of instructional technology among L2 instructors at Brigham Young University. An online survey was administered to 98 instructors, examining the following factors: time, factors concerning software and availability, the teacher training, and the attitudes of administrators. Results showed that the three most significant factors that impede the use of instructional technology among BYU instructors are a teacher’s level of proficiency, the lack of time for training, and a lack of quality software. The research also shows that
those instructors that had received training find themselves more competent and more prepared to integrate instructional technology in their courses than those that have not received any training. Because a teachers training in use of instructional technology has significant benefits that motivate students in second language acquisition, we can conclude that teachers would profit a great from in-service training.
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Chapter 1

Introduction

Twenty-first century technology offers a plethora of exciting approaches to and opportunities for pedagogy. “Technology in language education can increase the variety or diversity of learning opportunities and the quality of the learning experience in making input of more varied kinds learnable and accessible to each individual learner” (Pennington 1). The implementation of technology may be especially useful in a second language classroom, as it gives both teacher and student more accessibility to the target language in various aspects. As stated by Zhao and Frank, instructional technology can help teachers put together different aspects of the curriculum, direct student learning, model an idea or activity, or connect curriculum to real world tasks and be more dynamic. Instructional technology can help students “to develop new ways of thinking, think critically, gather and organize information, explore a topic, be more creative, be more productive” (32). Instructional technology allows a student or a teacher to compare a foreign text with its translation without spending an enormous amount of time with a dictionary. Technology can influence a student’s motivation to learn, and it can increase their interest and attention. Through technology, practice of pronunciation through speech recognition programs is available at anytime and without involving the help of a personal tutor. Videos with real life situations and native speech can aid in oral practices and pronunciation. Technology can help learners to feel connected to current information and current affairs in their L2 and can help respond to individual needs. It creates a
connection between new information and what learners already know within and outside of the course curriculum (Henry and Worthington 1). It makes available much more recent information than can be found in traditional textbooks. According to Bush, teachers should implement technology because it offers the following benefits:

- The value of authentic video
- Active student learning
- Student self-pacing and sequencing the enhancement of the teacher’s ability to deal with various styles and modalities
- The development of complex skills
- A cooperative learning environment

Bush also states that, in addition to all of the above advantages it brings to teachers, technology can help students to improve their second language skills and can even change student’s attitude towards their target language. Bush indicates that students who were involved in language programs that integrated the use of technology continued taking second year language courses. Furthermore, a survey conducted at the US Air Force Academy asked students there why they liked learning with technology and elicited the following responses:

- They liked working at their own pace.
- They found the lessons to be interesting.
- They liked hearing native speakers in authentic situations.
- They remarked, often with surprise, that they could understand conversations in the video (297).
Visuals presented with technology can make cultural lessons more appealing and memorable for students, increasing a students’ motivation towards the target culture. Technology can help students to move away from a dependence on the printed word and relay on a combination of sight, sound and movement (Moore et al.109 -127).

Machnaik reports that technology can change the learning environment in a classroom. In theory and practice, technology has proven to be a useful tool for learning in the classroom, “help[ing] students to feel success and grow to their fullest potential.” Thus, technology can help students develop their language creativity by providing a variety of language activities and exercises (12).

The use of a computer by teachers in the classroom has also brought about a change in the role of a teacher, taking him or her from the role of a lecturer to a facilitator of learning, helping students become more independent and more self sufficient (Yaghi 140). The presence of new technologies will not change everything in a language classroom, but if incorporated with effective teaching and learning practices, technology can greatly enhance traditional teaching practices (Knapp and Glenn). Pennington concludes that technology applied to language teaching will give students numerous advantages to expand their opportunities in successfully acquiring a second language (2).

If the use of technology is so crucial in our society, and if evidence shows that it can be of significant value in teaching and learning, why is it that various surveys indicate that the implementation of technology in the second language classroom is so limited (Ginsberg and McCormack)? The results of a survey done by the RAND Corporation showed that 7.7% of technology in public schools is used in math classes, 7.4% in English classes, 6.2% in science classes, and only 2.7% in foreign language
classes. There is little evidence that technology is playing a significant role in L2 acquisition (Bush 288). Several large studies and surveys conducted by Becker show that teachers do not frequently use technology to its full potential or in innovative ways that can truly lead to qualitatively different teaching and learning experiences (Becker 1999, 2000, 2001). Why is language-learning technology being neglected in schools in light of the possible benefits that it could offer teachers and students?

The purpose of this exploratory study is to discover some of the significant factors that impede the use of instructional technology among L2 teachers at the university level, examining specifically what factors limit the use of instructional technology in foreign language courses; who among BYU instructors (considering specifically their level of education, department, language, personal training) uses instructional technology in their courses most frequently; what type of instructional technology is available in classrooms; what technology has the most impact for L2 teaching; whether instructors of foreign languages receive support from their language departments; and whether instructors had any in-service training in the past school year. I believe that the responses to these questions will shed light on what could be done to encourage foreign language teachers to implement instructional technology in their courses.
Chapter 2

Literature Review

This literature review will focus on some factors that have been shown to prevent the implementation of technology in the classroom in general. Roszell (1995), Krysa (1998), Yaghi (1996), and Moore (2004), have each attempted to discover reasons for the limited use of technology in the classroom.

In 1995, Roszell conducted a study of factors affecting use of technology in an urban high school district in Saskatchewan, Canada. In summary, Roszell listed five factors that had the greatest impact on the implementation of technology:

- The availability of time for teachers to prepare to use computers in instruction
- The availability of high quality software
- The availability of hardware
- Personal knowledge about computers
- Administrative support

After determining these factors, Roszell interviewed high school teachers to find out to what degree they used technology in teaching and what, in their opinion, were the issues that prevented the use of technology in the classroom. Based on the results of these interviews, Roszell concluded that teachers believed that the implementation of technology is effective; however, only a few of them applied technology in their own teaching (171).

Krysa (1998) organized a further investigation of Roszell's study.
Krysa added “pedagogical factors,” such as teacher attitudes and teacher training, to Roszell’s original research. Krysa conducted interviews with four elementary school teachers. His goal was to discover how teachers implemented computer technology in school, to examine the factors that affected the use of computers in the classroom, and to discuss their personal views and experiences involving technology (12).

Yaghi (1996) added other factors to the question: the social, cultural, and psychological. He conducted a survey of high school teachers, administrators, and supervisors. Those receiving the surveys were asked to use personal experiences to elaborate on the main factors that impede the use of technology.

Moore (2002) conducted a survey for teachers of elementary, high school and middle school in the state of Texas. The results of this survey showed that factors that prevent the implementation of instructional technology in the foreign language courses were the level of a teacher’s education, their years of experience and language taught, and the school setting and type of school. The factors listed below come from the studies of Roszell, Krysa, Yaghi and Moore, and are supported by additional works of other researchers as indicated. The factors are not listed here in any particular order.

**The Time Factor**

Teachers must have time to learn necessary computer skills in order to apply these skills into their class curriculum (Brand 1). Initially, the implementation of technology in the teaching field requires time to learn the skill, to match software to the curriculum, and to provide assistance to the students (Bennet 1).
Teacher Attitude

“Positive teacher attitudes towards computing are critical if technology is to be effectively integrated into the curriculum” (Muller 23). Becker believes that those teachers who have been provided by their schools with a computer and all the necessary instructional technology within the classroom will be more likely to have a positive attitude towards implementation of instructional technology (Becker (1999) 21). Positive attitudes can come from enthusiasm and personal desire to learn computer skills. The teacher’s enthusiasm in turn, can be contagious for other teachers. Lipinski related his experience as a teacher who became passionately involved in implementing computers in his classes. After Lipinski’s colleagues observed his unique classes, they became interested in applying technology to their own curriculum. Lipinski says that in the process of time his enthusiasm spread through the whole school (Holzberg 34).

Software Issues

Schools have limited access to software because of its high expense. In many cases, schools have old, outdated computers that contain old software with limited capacity (Yaghi 147). Problems with reliability, such as hardware failures, poor or slow internet access and out of date software decreases instructors’ desire to use technology in the classroom. Software issues, for some teachers, bring out anxiety towards implementing any type of technology that might not function during the lesson. Since teachers have to have a second alternative to teach a lesson, if technology fails, they prefer to remain with the traditional method of teaching (Butler and Selbom 22–28).
The following list—suggested by Ginsberg and McCormick—indicates barriers that deter teachers from successfully implementing computer software:

- Matching software to curriculum
- Evaluation and quality control
- Acquisition and setting priorities
- Security and placement
- Appropriate use (24)

**Availability Problems**

Ginsberg and McCormick conducted a survey in which 1,163 secondary school teachers were asked what factors prevent technology implementation in their classes. The most common responses from the survey indicated that lack of access to technology prevents its use (2).

**Lack of Teacher’s Proficiency**

Only a minority of teachers consider themselves proficient with computers. A teacher’s personal unfamiliarity with technology is another reason why computers are so seldomly used in teaching (Yaghi 141).

In her thesis, Jane Barnard draws a scheme that represents how personal familiarity with technology influences its implementation (2).
According to Barnard “the acquisition of computer skills is neither smooth, nor linear; it takes time and aspiration” (Barnard 2). Barnard explains that the more experienced a teacher is with technology, the more he or she will appreciate it and will implement it in his or her field.

Barnett (2003) distinguished four stages of familiarity of teachers with computers:

- A teacher survival stage
  - Struggles against technology
  - Is assailed by problems (everything goes wrong)
  - Uses computers only for directed instruction

- A teacher in the mastery stage
  - Has increased tolerance to hardware and software problems
  - Begins to use new forms of interaction with students and classroom practices
  - Has increased technical competence and can troubleshoot simple problems

- A teacher in the impact stage
- Incorporates new working relationships and classroom structures
- Balances instruction and construction
- Is rarely threatened by technology
- Regularly creates technology enhanced instructional units

- A teacher in the innovation stage
  - Modifies his or her classroom environment to take full advantage of technology-enhanced curriculum and learning activities (3).

**Lack of Training**

Lack of teacher’s proficiency and lack of training are obviously closely related. The results of Yaghi’s questionnaire for high school teachers indicated that the majority expressed an overwhelming need for teacher training. In Yaghi’s interviews high school teachers stated that computer training is the most important factor for increasing the implementation of technology in the classroom (145). Teachers need instruction that helps them clearly see the benefits of teaching with technology. “When teachers engage with others in ongoing reflection about what they have learned about the instructional use of technology, they are more likely to critically evaluate their own pedagogical practice and redesign their instruction” (Brand 6). Well-trained teachers tend to be more comfortable with and more efficient for learners, while poorly-trained teachers may model bad experience that could cause negative attitudes towards classroom technology and among the students (Yaghi 141).

An important point about teacher training is that it needs to be organized and focused on teaching not solely about computers, but on current language programs that teachers can easily have access to and implement in their classroom.
According to Shibley, those students whose teachers had teacher training and effectively integrated technology in their classes outperformed students whose teachers have not received teacher training (63).

Attitudes of Administrators

The lack of support from administrators impedes the implementation of technology in the classroom. According to Yaghi’s survey, most teachers strongly believe that all teachers should implement technology. On the other hand, the same survey indicates that administrators think that the use of the computers should be restricted to those who can make the best use of it. Yaghi explains that this difference in opinion is due to financial problems, especially for those administrating in private educational institutions (148).

Brand has produced a list of what administrators of schools could do to encourage their staff to become technologically fluent. First, administrators could allow more flexibility in teacher’s schedules, which would let them practice and continue learning. Second, the administrators could encourage colleagues by coaching and helping them to adjust to technology. Third, Brand recommends that teachers observe computer implementation in each other’s classrooms. Finally, administrators should encourage staff and faculty to discuss and evaluate instruction that includes technology (1-10).

Level of Education

According to Moore’s survey, teachers’ level of education can influence the use of instructional technology in their language classes. Moore’s survey showed that teachers that have a doctorate degree implement technology more frequently than teachers who only have a bachelors’ or master’s degree (115-116).
years of experience

According to Moore, the number of years experience in teaching frequently determines the implementation of technology in the language classroom. Moore’s teachers’ survey suggests that teachers with the least experience (0-2 years) in teaching received high scores on the section concerning the implementation of technology. The author asserts that the factor could be attributed to the fact that those who have recently graduated might have been more exposed to instructional technology than their senior colleagues (116).

languages taught

Moore initially believed that teachers of commonly taught languages use more instructional technology than teachers of less commonly taught languages. Moore’s belief was based on the fact, assumption that Spanish, French and German are the three most commonly taught languages in the United States. Thus more software exists for the most commonly languages taught. However, the survey showed the opposite. Teachers of the Japanese language had implemented more technology than the others (117).

School Setting

The results of this section were not as salient due to the small population sample and further investigation is strongly suggested. According to Moore’s survey (117), teachers in rural settings had lower scores of implementing technology than their counterparts in urban areas.

Type of School

The results of a state survey of foreign language teachers indicate that teachers in elementary schools implement less technology than teachers in middle and high schools.
Once again, the results were not as significant due to the small population sample and more investigation is encouraged.

Social Factor

Social factors such as sex, age, socio-economic status, and locus of control may affect frequency of computer implementation among the teachers. For instance, male teachers implement technology more often than females, and younger teachers more often than older ones. Yaghi states that the strongest factor is socio-economic status. Those teachers who attended financially affluent schools and universities, furnished with modern technology, will have a better familiarity with technology than those who were deprived of technology during the academic period (141).

Cultural Factor

Using technology in education creates a cultural division between those who can use technology in the teaching field and those who cannot. Familiarity with computers can change the whole direction of teaching, everyday planning, lesson preparation, homework correction, record keeping and instructional activities. Technology not only gives an opportunity to its users to be more organized, and to have fast and easy access to teaching materials, but also can save an enormous amount of time.

At the international level, cultural problems might arise from unfamiliarity with the language of the software. Software comprehensibility could slow down the implementation of computers in non-western countries, since software in western countries is commonly issued in English or French and then shipped to other countries (Yaghi 142).
**Human or Psychological Factor**

A teacher’s personal pedagogical beliefs and their teaching practices and traditions can lead to a natural resistance to using new instructional technology in the teaching field (Becker, 2000a, 2000b; Hadley and Sheingold, 1993; Sandholtz et al., 1997; Zhao and Cziko, 2001). Teachers who are not very familiar with technology naturally have little commitment to implement technology in the classroom. They might be embarrassed to commit errors in front of students or their colleagues. Undesired pressure from supervisors could cause psychological anxiety and reduced motivation to acquire computer skills (Yaghi 140). All of the above can be referred to as the psychological or human factors.

**Lack of a Personal Computer among the Students**

The lack of sufficient commitment to the implementation of technology can come from a shortage of personal computers among students. Teachers for instance, cannot expect Power Point Presentations from students when not all of them have access to computers outside of school. Often students are asked to get together in pairs or small groups after class for language practice. But students often do not fulfill such assignments due to schedule conflicts, lack of time or other issues. If everybody owned a computer, there would be no need to meet after class. A professor could simply distribute an interactive program in which students could have a conversation with a computer at any time they desire. There are several advantages to practicing L2 with an interactive computer program instead of a study-buddy. Computer programs, for example, provide grammatically correct answers with native like pronunciation, instead of perpetuating the mistakes of a study-buddy.
Conclusion

Time factors, teacher attitudes, software factors, availability issues, personal unfamiliarity with computers, lack of training, attitudes of administrators, a teacher’s level of education, years of experience, languages taught, school setting, type of school, social factors, cultural factors, and psychological (or human) factors have all been shown to affect the use of technology in the classroom. These factors must be addressed for the implementation of technology in the classroom to be possible.

The Proposal

Roszell, Krysa, Yaghi and Moore’s studies were intended to be exploratory projects that would provide direction and guidance for more extensive studies. However, these studies were done only with elementary and high school level teachers and not all of them were necessarily teaching foreign languages. I want to replicate their method on a different level. Instead of conducting surveys or oral interviews on teachers of elementary or high schools, my survey questions will be conducted on line with foreign language professors, instructors and student instructors at the university level at Brigham Young University. The goals of the survey are to discern what factors impede the use of instructional technology in foreign language courses, who among BYU instructors (taking into account level of education, department, language, personal training) uses instructional technology in their courses more frequently, what type of instructional technology is available in the classrooms, what technology used has the most impact for L2 teaching, whether instructors of foreign languages receive support from their language departments, and whether they had any pre-service training in the past school year. I believe that the responses to these questions will shed light on what could be done to
encourage foreign language teachers to implement instructional technology in their courses.
Chapter 3

Method

Introduction

According to the preceding literature review, various studies show that the implementation of instructional technology in second language courses could improve and enrich students’ L2 acquisition and motivate students to continue learning their target language. Technology aids students to move away from their dependence on the printed word and towards a combination of sight, sound, and movement. As indicated in the literature review, studies show the positive advantages of instructional technology. In spite of those positive factors secondary educational teachers are not taking full advantage of it. If instructional technology is so beneficial, what stops teachers from using it?

This chapter addresses these issues, beginning with a statement of research questions, followed by the information on the subjects of this study, and concluding with a description of the instruments used to address the original research questions.

Research questions

One of the main goals of this exploratory study is to discover the major factors that impede the use of instructional technology in teaching a foreign language at the university level. We conducted a survey—discussed below—that addresses the following topics: time; software issues; availability of quality materials and of instructional technology; the teacher’s proficiency, anxiety level, personal training, level of education, years of experience, and languages taught; financial support by administrators; and availability of personal computers among students. In investigating
the variety of technology available, the survey asked about computers that are connected to the Internet, televisions, DVD players, online video, document cameras, electronic blackboard, overhead projectors, and data projectors (such as LCD Projector for computer and video).

Who among BYU instructors use instructional technology in their courses most frequently? What type of instructional technology is available in the classrooms? What type of technology do teachers find has the most impact in L2 teaching? Do instructors of foreign languages receive support from their language departments? Have instructors had any training in the past school year 2006-2007 in the use of technology?

**Questions**

These are the main questions that the teacher’s survey was interested to explore:

**Impediment to Use**

**What is the effect of various factors upon the use of instructional technology?**

In order to answer written above question we had to define each factor and find its effect on use of instructional technology in the classroom individually.

1. What is the effect of teachers' proficiency with instructional technology upon the use of instructional technology in the classroom?

2. What is the effect of teachers' anxiety towards technology use upon the use of Instructional Technology in the classroom?

3. What is the effect of technology availability in the classroom upon the use of Instructional Technology in the classroom?

4. What is the effect of the “lack of personal computers among students” upon the use of Instructional Technology in the classroom?

5. What is the effect of teachers’ lack of experience upon the use of Instructional Technology in the classroom?

6. What is the effect of not having enough time upon the use of Instructional Technology in classroom?
7. What is the effect of teachers’ lack of quality materials upon the use of Instructional Technology in classroom?

Section two: Availability and Implementation of Technology in the Classroom

1. **Who among BYU instructors** (level of education, gender, department, language, personal training) **uses instructional technology in their courses less frequently?**

2. **Which types of instructional technology to teachers have available in the classroom?**

   - Computer that is connected to the Internet
   - Television
   - DVD player
   - Online video
   - Document camera
   - Electronic blackboard
   - Overhead projector
   - Data projector (such as LCD Projector for computer and video)

3. **What type of instructional technology do teachers believe to have significant impact on teaching L2 classes?**

   - Computer that is connected to the Internet
   - Television
   - DVD player
   - Online video
   - Document camera
   - Electronic blackboard
   - Overhead projector
   - Data projector (such as LCD Projector for computer and video)

4. **Do instructors overall receive support (measured by department support) from their Language Departments? (If so, which department offers more frequent support to their employees?)**

   - Asian and Near Eastern Center for Language Studies
   - Classics and Comparative Literature
   - French and Italian
   - Germanic and Slavic Languages
   - Linguistics and English Language (TESOL teaching or other language courses)
   - Spanish and Portuguese
5. **How many instructors (%) had any form of professional training in the use of technology during the past school year 2006-2007?**

**The Subjects**

Four main research studies on instructional technology and teaching by Roszell, Krysa, Yaghi, and Moore focused their studies on elementary, middle, and high school levels. The researchers in conducted surveys, kept observation diaries and held interviews with secondary school instructors. This research study, in contrast, focuses on how instructional technology is being implemented with instructors at the university level.

Participants for this study are foreign language instructors at Brigham Young University. The range of instructors included those who are undergraduate student instructors, graduate student instructors, and faculty with M.A.’s and Ph.D.’s. The participants differed in age, teaching experience, level of education and the level of language courses they taught. The participants come from the following language departments: Asian and Near Eastern, French and Italian, Spanish and Portuguese, Slavic and German, and English (TESOL teaching). The study is based on a survey conducted with 98 foreign language instructors (see Appendix A).
Demographics

There were 98 instructors of foreign languages at Brigham Young University who participated in the teacher’s survey, 38 (39%) female instructors and 60 (59%) male instructors.

According to the survey, second language instructors’ level of education varied. Most of the instructors that took the survey had attained doctoral degrees. Instructors who held only a Bachelor’s degree comprised the minority. The range of instructors’ age was from 20 to 72, with the average being 41.

Following tables give the results received, but it is important to notice that not everyone answered all the questions. Some instructors are teaching more than one level and more than one foreign language.

Table 1

Level of Education

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Number of Participants</th>
<th>Percentage of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ph.D.</td>
<td>45</td>
<td>47%</td>
</tr>
<tr>
<td>M.A.</td>
<td>15</td>
<td>16%</td>
</tr>
<tr>
<td>B.A.</td>
<td>17</td>
<td>18%</td>
</tr>
<tr>
<td>Undergraduates</td>
<td>18</td>
<td>19%</td>
</tr>
</tbody>
</table>

Five BYU language departments participated in the survey: Spanish and Portuguese, Germanic and Slavic Languages, French and Italian, Linguistics and English
Language, Asian and Near Eastern Studies. The following table lists the name of the departments and the portion of the faculty that participated within each department.

Table 2

Departments

<table>
<thead>
<tr>
<th>Departments</th>
<th>Percentages of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish and Portuguese</td>
<td>24%</td>
</tr>
<tr>
<td>Germanic and Slavic Languages</td>
<td>21%</td>
</tr>
<tr>
<td>French and Italian</td>
<td>14.5%</td>
</tr>
<tr>
<td>Linguistics and English Language</td>
<td>14%</td>
</tr>
<tr>
<td>Asian and Near Eastern Studies</td>
<td>7%</td>
</tr>
</tbody>
</table>

Out of all the departments, the Spanish and Portuguese Department and Germanic and Slavic Languages Department had the most instructors who participated in the survey.

The table below illustrates the number and the percentages of foreign language instructors at BYU who participated in the survey. Altogether instructors in 17 languages contributed their responses in the survey. The majority of the participants were Spanish, German, and French instructors.
Table 3

Language Taught Among Instructors

<table>
<thead>
<tr>
<th>Language Taught/ Instructors Participated</th>
<th>Number of participants</th>
<th>Percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish</td>
<td>21</td>
<td>26%</td>
</tr>
<tr>
<td>German</td>
<td>11</td>
<td>13%</td>
</tr>
<tr>
<td>French</td>
<td>12</td>
<td>11%</td>
</tr>
<tr>
<td>Italian</td>
<td>7</td>
<td>7%</td>
</tr>
<tr>
<td>Russian</td>
<td>7</td>
<td>7%</td>
</tr>
<tr>
<td>ESL</td>
<td>8</td>
<td>7%</td>
</tr>
<tr>
<td>Japanese</td>
<td>3</td>
<td>4%</td>
</tr>
<tr>
<td>Swedish</td>
<td>3</td>
<td>4%</td>
</tr>
<tr>
<td>Greek</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>Chinese-Mandarin</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Portuguese</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Romanian</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Tagalong</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Turkish</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Welch</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Cantonese</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Arabic</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>

As illustrated in Table 4, 66 out of 98 instructors that took the survey teach 100-to 300-level courses. Only 18 instructors taught 500-level courses.

Table 4

Level of Courses

<table>
<thead>
<tr>
<th>Level of L2 Course</th>
<th>Number of Instructors</th>
<th>Percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 100</td>
<td>35</td>
<td>23%</td>
</tr>
<tr>
<td>Level 200</td>
<td>26</td>
<td>18%</td>
</tr>
<tr>
<td>Level 300</td>
<td>41</td>
<td>26%</td>
</tr>
<tr>
<td>Level 400</td>
<td>34</td>
<td>21%</td>
</tr>
<tr>
<td>Level 500</td>
<td>18</td>
<td>11%</td>
</tr>
</tbody>
</table>
The Instrument

In order to determine the answers to the research questions, BYU foreign language instructors were asked to respond to a survey set in a Likert-type scale on the following website: http://beauvoir.byu.edu/teacher's%20survey/survey.php

Dean of the College of Humanities at the Brigham Young University, John R. Rosenberg, asked each department in the College of Humanities to involve their foreign language instructors to participate in the survey. Alan Patton, a programmer in the ARCLITE Lab of the Center for Language Studies at BYU working under the direction of Dr. Michael Bush, transferred the survey into a website that was available to all the instructors of foreign languages. The survey format was chosen for the purpose of this study because it facilitated the measurement of the opinions of a large population of instructors within one educational institution.
Chapter 4

Results of the Study

Introduction

Various research studies that are mentioned in the literature review section indicate that instructional technology could improve and encourage second language learning. With that in mind, the goals of this exploratory study were to address the following questions:

1) Who among BYU instructors (considering specifically their level of education, department, language of instruction, course level, personal training) use instructional technology in their courses most frequently?

2) What type of instructional technology is available in the classrooms?

3) Of the technology used, what has the most impact for L2 teaching?

4) Do instructors of foreign languages receive support from their language departments?

5) Have L2 instructors had any in-service training in the past school year?

6) What are the most frequent issues that impede the use of instructional technology in foreign language courses?

In order to answer the above questions, a teacher’s survey\(^1\) was conducted at the main campus of Brigham Young University in Provo, Utah.

\(^1\) For the Teacher’s Survey see Appendix.
Availability and Implementation of Technology in the Classroom

Table 5 and Figure 1 display the responses to the survey regarding whether instructional technology such as computers with Internet connection, televisions, DVD players, online video, document cameras, or overhead projectors were available for instructors to use in their classrooms. Among all the technologies, only electronic blackboards and document cameras were not available to all the language instructors. Results from the survey show that every classroom at BYU has at least one overhead projector. Note that not all respondents gave a complete answer to this portion of the survey.

Table 5
Availability of Technology

<table>
<thead>
<tr>
<th>Type of technology</th>
<th>Available</th>
<th>Not available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer with Internet</td>
<td>62</td>
<td>19</td>
</tr>
<tr>
<td>Television</td>
<td>47</td>
<td>19</td>
</tr>
<tr>
<td>DVD Player</td>
<td>64</td>
<td>6</td>
</tr>
<tr>
<td>Online Video</td>
<td>51</td>
<td>17</td>
</tr>
<tr>
<td>Document Camera</td>
<td>17</td>
<td>37</td>
</tr>
<tr>
<td>Overhead Projector</td>
<td>74</td>
<td>9</td>
</tr>
<tr>
<td>LCD</td>
<td>71</td>
<td>9</td>
</tr>
<tr>
<td>Electronic Blackboard</td>
<td>58</td>
<td>16</td>
</tr>
</tbody>
</table>
Survey Results: Frequency of Instructional Technology Use among BYU Instructors

Data from the teacher’s survey do not indicate any significant differences in tendencies toward using instructional technology between different genders, levels of education, departments, languages being taught and personal training. However the results do show the influence of instructional technology use on years of experience and age of instructors. It appears that younger instructors with fewer years of experience apply instructional technology in their classrooms more often than the older instructors with more years of experience.
Figure 2 below points out what type of instructional technology instructor’s use in their classrooms and how frequently they implement it. The types of technology included in the survey were videodisc, DVD, software, VHS, PowerPoint, hypermedia, multimedia, and online video. It appears that the most used technology among the language instructors are VHS and DVD player. The majority of the instructors hardly ever or infrequently use the rest of the technologies, such as: software, PowerPoint, videodisc, hypermedia, and multimedia.

Figure 2
Frequency of Instructional Technology Use Among BYU Instructors
Impact of Technology on Teaching

Figure 3 shows that among the following technology (television, slide projector, DVD player, online video, electronic Blackboard, overhead projector, LCD projector, pod casting), those that have significant impact are DVD players, computers connected to the Internet, overhead projectors, and LCD projectors. Television, online video, electronic blackboard, and document cameras, according to the teachers’ survey, do not have a significant impact on L2 teaching and learning.

The responses to questions one through three, represented in blue, show that instructors feel these technologies do not have a significant impact on L2 teaching. The responses to questions from 5-7, represented in purple, show that instructors feel these technologies have significant impact on teaching. Question number 4 was omitted from the results since it was in the middle of the pole.

Figure 3
Impact of Technology
**Administrative support**

The survey results show that the majority of L2 instructors at BYU find their language department supportive in finding resources and encouraging them philosophically.

Table 6
Departments’ Support

<table>
<thead>
<tr>
<th>Departments’ support</th>
<th>L2 Instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department provides philosophical support</td>
<td>54 %</td>
</tr>
<tr>
<td>Department does not provide philosophical support</td>
<td>46%</td>
</tr>
<tr>
<td>Department provides resources</td>
<td>51%</td>
</tr>
<tr>
<td>Department does not provide resources</td>
<td>49%</td>
</tr>
</tbody>
</table>

**Pre-Service Training**

The figure below points out that the majority of the instructors had not had pre-service training. Out of all the instructors only 19 instructors had pre-service training.

Figure 4
Pre-Service Training (per cent)
**Impediments to Use**

Table 8 shows statistically calculated outcomes from examining the factors that influence the use of instructional technology in the classroom. In order to find the effect of factors that impede the use of instructional technology among the L2 instructors, an analysis of variance was run using a General Linear Model. The results serve to illustrate the effect of factors that impede the use of instructional technology in the L2 classrooms. The independent variables were the factors that impeded the use of IT, and the dependent variable was use of IT in the classroom. In order for the GLM procedure to work, we made contractions for each of the factors. Below, Table 7 defines each contraction in order to clarify the findings of Table 8.

Table 7  
**Definition of Contractions**

<table>
<thead>
<tr>
<th>Imped_Anxiety</th>
<th>Teacher's anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imped_Financial_Support</td>
<td>Lack of financial support by department</td>
</tr>
<tr>
<td>Imped_Time</td>
<td>Lack of time</td>
</tr>
<tr>
<td>Imped_Training</td>
<td>Lack of training</td>
</tr>
<tr>
<td>Imped_Student_PCs</td>
<td>Lack of personal computers among students</td>
</tr>
<tr>
<td>TeachProf</td>
<td>Teacher’s lack of proficiency</td>
</tr>
<tr>
<td>Imped_Tech_Avail_Class</td>
<td>Technology available in the classroom</td>
</tr>
<tr>
<td>Imped_Quality_materials</td>
<td>Lack of quality of materials</td>
</tr>
<tr>
<td>Imped_Avail_Software</td>
<td>Lack of available software</td>
</tr>
<tr>
<td>Years-exp-teach</td>
<td>Years of experience teaching</td>
</tr>
</tbody>
</table>
Those variables that are followed by an asterisk contain a combination of an interaction between two factors. For instance, the variable $Imped\_Anxi*TeachProf$ – represents an interaction between teacher’s anxiety and teacher’s proficiency, $TeachProf*AvailTechC$ – represents an interaction between teacher’s proficiency and availability of technology in the classroom.

Table 8

Impediments to Technology Use

Analysis for Technology Use in the Classroom

The GLM Procedure

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III SS</th>
<th>Mean Square</th>
<th>F Value</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imped_Anxiety</td>
<td>37.1931</td>
<td>37.1931</td>
<td>0.77</td>
<td>0.3888</td>
</tr>
<tr>
<td>Imped_Financial_Support</td>
<td>64.9110</td>
<td>64.9191</td>
<td>1.35</td>
<td>0.2580</td>
</tr>
<tr>
<td>Imped_Time</td>
<td>143.2620</td>
<td>143.2620</td>
<td>2.98</td>
<td>0.0988</td>
</tr>
<tr>
<td>Imped_Training</td>
<td>13.8011</td>
<td>13.8011</td>
<td>0.29</td>
<td>0.5975</td>
</tr>
<tr>
<td>Imped_Student_PCs</td>
<td>84.0200</td>
<td>84.0200</td>
<td>1.75</td>
<td>0.2001</td>
</tr>
<tr>
<td>TeachProf</td>
<td>77.8334</td>
<td>77.8334</td>
<td>1.62</td>
<td>0.2169</td>
</tr>
<tr>
<td>AvailTechClass</td>
<td>34.6449</td>
<td>134.6449</td>
<td>2.80</td>
<td>0.1088</td>
</tr>
<tr>
<td>Imped_HW_St_PCs</td>
<td>49.0578</td>
<td>49.0578</td>
<td>1.02</td>
<td>0.3236</td>
</tr>
<tr>
<td>Years_exp_teach</td>
<td>30.4171</td>
<td>30.4171</td>
<td>0.63</td>
<td>0.4350</td>
</tr>
<tr>
<td>Imped_Anxi*TeachProf</td>
<td>206.3491</td>
<td>206.3491</td>
<td>4.30</td>
<td>0.0507</td>
</tr>
<tr>
<td>TeachProf*AvailTechC</td>
<td>158.7052</td>
<td>158.7052</td>
<td>3.31</td>
<td>0.0834</td>
</tr>
<tr>
<td>TeachProf*Imped_HW_S</td>
<td>9.6977</td>
<td>9.6977</td>
<td>0.20</td>
<td>0.6577</td>
</tr>
<tr>
<td>TeachProf*Years_exp</td>
<td>2.1943</td>
<td>2.1943</td>
<td>0.05</td>
<td>0.8328</td>
</tr>
<tr>
<td>Imped_Anx*AvailTechC</td>
<td>77.2929</td>
<td>77.2929</td>
<td>1.61</td>
<td>0.2184</td>
</tr>
<tr>
<td>Imped_Anx*Imped_HW_S</td>
<td>61.4406</td>
<td>61.4406</td>
<td>1.28</td>
<td>0.2707</td>
</tr>
<tr>
<td>Imped_Anx*Years_exp</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.00</td>
<td>1.0000</td>
</tr>
<tr>
<td>AvailTech*Imped_HW_S</td>
<td>18.4207</td>
<td>18.4207</td>
<td>0.38</td>
<td>0.5423</td>
</tr>
<tr>
<td>AvailTech*Years_exp</td>
<td>79.9985</td>
<td>79.9985</td>
<td>1.67</td>
<td>0.2108</td>
</tr>
<tr>
<td>Imped_HW_Years_exp</td>
<td>18.8069</td>
<td>18.8069</td>
<td>0.39</td>
<td>0.5382</td>
</tr>
<tr>
<td>Imped_Tech_Avail_Class</td>
<td>97.96394</td>
<td>97.9639</td>
<td>2.04</td>
<td>0.1679</td>
</tr>
<tr>
<td>Imped_Quality_materials</td>
<td>234.69424</td>
<td>34.69424</td>
<td>4.89</td>
<td>0.0383</td>
</tr>
<tr>
<td>Imped_Avail_Software</td>
<td>18.683319</td>
<td>18.68331</td>
<td>0.39</td>
<td>0.5395</td>
</tr>
</tbody>
</table>
After eliminating the factors that did not reach a minimal level of statistical significance, three main factors emerged that have the greatest effect and significance on impeding the use of instructional technology among the L2 teachers. Those three significant factors are: lack of quality materials, lack of time among instructors, and teacher proficiency. Teacher proficiency and quality of materials factors’ are significant at \( p < 0.05 \) and lack of time among instructors is significant at \( p < 0.1 \) value (see Table 9) The rest of the factors were not significant, including factors that were put together in order to determine various interactions.

Table 9

Most Significant Impediments to Technology Use

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III SS</th>
<th>Mean Square</th>
<th>F Value</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imped_Quality_materials</td>
<td>406.121443</td>
<td>406.121443</td>
<td>8.67</td>
<td>0.0046</td>
</tr>
<tr>
<td>Imped_Time</td>
<td>143.2620</td>
<td>147.2620</td>
<td>3.14</td>
<td>0.0814</td>
</tr>
<tr>
<td>TeachProf</td>
<td>1388.870546</td>
<td>1388.870546</td>
<td>29.64</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>
Chapter 5

Conclusion

Ninety-eight BYU foreign language instructors participated in the online teacher’s survey.

The purpose of the online teacher’s survey was to:

(1) Determine what factors hinder or prevent the use of instructional technology among BYU L2 language instructors. Among the factors that we have selected to survey are the availability of instructional technology in the classroom, the lack of availability of quality materials, the lack of software, the teachers’ anxiety level, the availability of financial support by department, time, training, availability of personal computers among students, the teachers’ proficiency, and their years of experience of teaching.

(2) Discern who among BYU instructors (when considering their level of education, department, language, course level, personal training) use instructional technology in their courses more frequently, what type of instructional technology is available in the classrooms, of the technology used which has the most impact for L2 teaching, whether instructors of foreign languages receive support from their language departments and whether they had any pre-service training in the past school year.

Discussion

The teacher’s survey showed no correlation between the instructors’ level of education, department, language being taught, course level or gender and use of instructional technology more frequently than others.
As we have seen from the results of Chapter 4, Brigham Young University makes instructional technology available in most of the classes. All of the classrooms at BYU have at least one overhead projector; most BYU classes have at least one computer that is connected to the Internet, which allows possibilities for online video. There are also DVD players, LCD projectors, and TV in most of the classes or are available upon request.

According to the teacher’s survey, BYU language departments more than half of the time provide philosophical support most of the time and also provide their instructors with necessary resources.

Teachers in the survey admitted that the impact of instructional technology in teaching is indeed positive. Those instructors that use instructional technology in their courses responded that technology such as an LCD projector, overhead projector or DVD player all have a high impact on their teaching and the learning of their students.

In spite of availability of instructional technology, support from the administrators, and teacher’s understanding of the significant impact of technology in second language teaching, the results of the teacher’s survey suggest that the teachers employ instructional technology in the classrooms less than they could.

The survey results indicated that the most significant issues that impede teachers from using instructional technology are teachers’ proficiency, lack of time among instructors to learn and be trained, and a lack of quality of materials.

In spite of the great promise that instructional technology can bring to second language teaching and learning, educational success will be unattainable without teacher’s expertise. Teachers’ lack of expertise is clearly connected with a lack of time to be trained. In the research, there was a correlation between the teachers who reported
themselves as being trained and competent enough to integrate technology in their courses and those who saw a great impact of technology in their classrooms. Skilled instructors also felt that their training had sufficiently prepared them to integrate instructional technology creatively and confidently into their lessons.

The results of the survey show that only 19 out of 98 instructors had training during the year of 2006. If instructors are not trained and familiarized with technology and software, even good quality of technology will not be of any help.

**Study Limitations**

One of the limitations of this study is that there were only 98 instructors who took the survey. Also, not every instructor answered every question—some instructors had skipped questions that they did not want to answer. It is important to notice that not all the factors have been mentioned in the survey. Some factors such as: school setting, type of school, cultural, and human or psychological factor were not included in this study and is the subject of future research.

**Conclusion**

According to this survey showed are not using technology frequently because of their lack of proficiency, lack of time to get trained, and lack of available quality software. The first two of these factors have not previously been noted. One of solutions that might help L2 instructors to use technology more effectively would be to develop a course for all language instructors that would help them to become familiar with instructional technology and software. Making the said course free and accessible to teachers with varying schedules could be a great step towards enriching our classes with advantages that instructional technology can give.
Appendix A

Teacher’s Survey

Personal Information

Please respond to the following items.

1. Gender:
   ○ Male
   ○ Female

2. Your age: ___________

3. What is the highest level of education you have completed?
   ○ Undergraduate
   ○ B.A.
   ○ M.A.
   ○ PhD

4. To which of the following departments do you belong?
   ○ Asian and Near Eastern
   ○ Center for Language Studies
   ○ Classics, and Comparative Literature
   ○ French and Italian
   ○ Germanic and Slavic Languages
   ○ Linguistics and English Language (TESOL teaching or other language courses)
   ○ Spanish and Portuguese

5. Which foreign language(s) do you currently teach?
   □ Arabic    □ Cantonese    □ Chinese – Mandarin
   □ Cantonese □ Czech       □ Danish
   □ Dutch     □ ESL         □ French
   □ Farsi     □ German      □ Greek
   □ Hawaiian  □ Hebrew      □ Hindi
   □ Hungarian □ Icelandic   □ Italian
   □ Japanese  □ Korean      □ Latin-classical
   □ Norwegian □ Polish      □ Portuguese
   □ Romanian  □ Russian     □ Samoan
   □ Serbo-Croatian □ Spanish    □ Swahili
   □ Swedish   □ Tagalog     □ Tahitian
   □ Tongan    □ Turkish     □ Welsh

6. If you teach a language not listed above, please indicate which language(s) you teach here: ___________________________
7. What language level do you teach?
   - 100 level
   - 200 level
   - 300 level
   - 400 level
   - 500 level

8. How many years of experience do you have teaching foreign languages/ 
   TESOL at the university level? [_____] [______]

Note: After submitting this page, you will not be able to modify any of your 
responses.
Availability and Implementation of Technology in the Classroom

1. Which of the following instructional technologies do you have available in any of the classrooms you teach language courses?

<table>
<thead>
<tr>
<th></th>
<th>Not available</th>
<th>Yes, one in the classroom</th>
<th>Yes, more than one in the classroom</th>
<th>Available upon request</th>
<th>I don't know what this is</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer that is connected to the Internet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Television</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DVD player</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online video</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Document camera</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic blackboard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overhead projector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data projector (such as LCD Projector for computer and video)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. How much impact do you believe the following technologies have on the way you teach your classes? (Where N/A represents "Not available". For the level of impact, scale your response such that 0 represents no impact, and 5 represents significant impact):

<table>
<thead>
<tr>
<th></th>
<th>N/A</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Television</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slide projector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DVD player</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online video</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic Blackboards</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overhead projector (for transparencies)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3. Does your department support acquisition and implementation of computer technology in the classroom? (Where 0 is no support and 5 is strong support).

```
0 1 2 3 4 5
```

4. With reference to providing support for the implementation of computer and other media technologies in my teaching, my department: (Please click on all that apply)
- [ ] Provides no support
- [ ] Encourages me philosophically
- [ ] Provides time for me to learn
- [ ] Provides resources
- [ ] Provides time for me to work in this area
- [ ] Provides funds for hiring students to help me in my work in this area

5. In the classes that you teach, how frequently do you use the following technologies?

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Once a semester</th>
<th>A couple of times per semester</th>
<th>Monthly</th>
<th>Weekly</th>
<th>A couple of times per week</th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>Videodisc</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DVD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Software exercises</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VHS videocassettes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PowerPoint</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypermedia (web pages that contain links to other pages, such as wikipedia)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multimedia (video and audio accessed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Through text-based pages</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
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<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>'Drill &amp; Practice' programs or tutorials</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Online video</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
</tbody>
</table>

6. Rate the impact you believe each of the following technologies have to increase language acquisition in the classroom. Range from 0 (No impact) to 5 (High impact).

<table>
<thead>
<tr>
<th>Technology</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation software (PowerPoint)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Hypermedia (Web pages that contain links to other pages, such as wikipedia)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Multimedia (Video and audio accessed through text-based pages)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Blackboard group discussion chats</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>'Drill &amp; Practice' programs or tutorials</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Online video</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

7. Rate the degree to which the following are impediments to your use of technology in the courses you teach (where 0 is no impediment and 5 represents a significant impediment).

<table>
<thead>
<tr>
<th>Impediment</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher's lack of experience</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Student's lack of experience</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Technology availability in the classroom</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Quality materials</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Availability of software</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>My anxiety towards technology</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Lack of financial support from the university</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Not enough time to keep current</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Lack of training</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Lack of personal computers among students</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
## Use of Technology Outside of the Classroom and Among the Students

1. As homework for the classes that you teach, how frequently do your students use each of the following technologies:

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Once a semester</th>
<th>A couple of times per semester</th>
<th>Monthly</th>
<th>Weekly</th>
<th>A couple of times per week</th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>Videodisc</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DVD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Software exercises</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VHS videocassettes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PowerPoint</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypermedia (Web pages that contain links to other pages, such as wikipedia)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multimedia (Video and audio accessed through text-based pages)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;Drill &amp; Practice&quot; programs or tutorials</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online video</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Podcasting (using Apple iPod or MP3 player)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. For each of the following questions please indicate the degree to which you disagree (1) or agree (5):
If each student were to own a personal computer, it would encourage me to implement more instructional technology into my language class curriculum.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

In my opinion, majors in the humanities should be required to own a personal computer.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

3. Rate the degree to which the following are impediments to your assignment of technology-based activities as homework in the courses that you teach (where 0 is no impediment and 5 represents a significant impediment):

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher's lack of expertise</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student's lack of expertise</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality materials</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of software</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My anxiety towards technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of financial support from the university</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not enough time to keep current</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My lack of training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of personal computers among my students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: After submitting this page, you will not be able to modify any of your responses.
Appendix B

Results of the Survey

Personal Information (ID: 2; child number 1)

(Item ID: 1) Instructions
1. Please respond to the following items.

(Item ID: 4) Multiple Choice Radio Buttons
2. Gender:
   - Female 38
   - Male 61

(Item ID: 3) Multiple Choice Menu
3. Your age:
   - 19 1
   - 20 2
   - 22 2
   - 23 7
   - 24 4
   - 25 2
   - 26 3
   - 27 6
   - 28 3
   - 29 1
   - 30 2
   - 32 2
4. What is the highest level of education you have completed?
   - B.A. 17
   - M.A. 15
   - PhD 45
   - Undergraduate 19

   (Item ID: 6) Multiple Choice Radio Buttons

5. To which of the following departments do you belong?
   - Asian and Near Eastern 7
   - Center for Language Studies 11
   - Classics, and Comparative Literature 9
   - French and Italian 14
   - Germanic and Slavic Languages 20
   - Linguistics and English Language (TESOL teaching or other language courses) 14
   - Spanish and Portuguese 20

   (Item ID: 7) Check All That Apply

6. Which foreign language(s) do you currently teach?
   - Arabic 2
   - Cantonese 1
   - Chinese – Mandarin 2
   - Cantonese 1
   - Czech 0
   - Danish 0
   - Dutch 0
   - ESL 8
   - French 12
   - Farsi 0
   - German 11
   - Greek 3
   - Hawaiian 0
   - Hebrew 0
Hindi 0
Hungarian 0
Icelandic 1
Italian 7
Japanese 3
Korean 0
Latin-classical 2
Norwegian 1
Polish 1
Portuguese 1
Romanian 1
Russian 7
Samoa 0
Serbo-Croatian 0
Spanish 21
Swahili 0
Swedish 3
Tagalog 1
Tahitian 0
Tongan 0
Turkish 1
Welsh 1

(Item ID: 8) Open Ended Short

7. If you teach a language not listed above, please indicate which language(s) you teach here:

English, Middle English, Proto-Indo-European; None currently; English; ESL; Ukrainian; Afrikaans; Mongolian; Thai; Afrikaans

(Item ID: 9) Check All That Apply

8. What language level do you teach?

100 level 36
9. How many years of experience do you have teaching foreign languages/TESOL at the university level?
Availability and Implementation of Technology in the Classroom (ID: 3; child number 2)

(Item ID: 2) Matrix - Likert

1. Which of the following instructional technologies do you have available in any of the classrooms you teach language courses?

<table>
<thead>
<tr>
<th>Computer that is connected to the Internet</th>
<th>Television</th>
<th>DVD player</th>
<th>Online videos</th>
<th>Document camera</th>
<th>Electronic blackboard</th>
<th>Overhead projector</th>
<th>Data projector (such as LCD Projector for computer and video)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available (1)</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Yes, one in the classroom (2)</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Yes, more than one in the classroom (3)</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>
(Item ID: 21) Maxtrix - Likert

2. How much impact do you believe the follow technologies have on the way you teach your classes? (Where N/A represents "Not available". For the level of impact, scale your response such that 0 represents no impact, and 5 represents significant impact):

<table>
<thead>
<tr>
<th>Television</th>
<th>Slide projector</th>
<th>DVD player</th>
<th>Online video</th>
<th>Electronic Blackboards</th>
<th>Overhead projector (for transparencies)</th>
<th>Data projector (such as LCD Projector for computer and videos)</th>
<th>Podcasting using Apple iPod or MP3 player</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A (1)</td>
<td>N/A (1)</td>
<td>N/A (1)</td>
<td>N/A (1)</td>
<td>N/A (1)</td>
<td>N/A (1)</td>
<td>N/A (1)</td>
<td>N/A (1)</td>
</tr>
<tr>
<td>0 (2)</td>
<td>1 (7)</td>
<td>1 (7)</td>
<td>1 (7)</td>
<td>1 (7)</td>
<td>1 (7)</td>
<td>1 (7)</td>
<td>1 (7)</td>
</tr>
<tr>
<td>1 (3)</td>
<td>1 (1)</td>
<td>1 (1)</td>
<td>1 (1)</td>
<td>1 (1)</td>
<td>1 (1)</td>
<td>1 (1)</td>
<td>1 (1)</td>
</tr>
<tr>
<td>2 (4)</td>
<td>3 (3)</td>
<td>0 (2)</td>
<td>0 (2)</td>
<td>2 (4)</td>
<td>2 (4)</td>
<td>2 (4)</td>
<td>2 (4)</td>
</tr>
<tr>
<td>3 (5)</td>
<td>4 (1)</td>
<td>3 (5)</td>
<td>3 (5)</td>
<td>4 (1)</td>
<td>1 (1)</td>
<td>3 (5)</td>
<td>3 (5)</td>
</tr>
<tr>
<td>4 (6)</td>
<td>1 (1)</td>
<td>1 (1)</td>
<td>4 (6)</td>
<td>1 (1)</td>
<td>1 (1)</td>
<td>1 (1)</td>
<td>1 (1)</td>
</tr>
<tr>
<td>5 (7)</td>
<td>6</td>
<td>5 (7)</td>
<td>5 (7)</td>
<td>5 (7)</td>
<td>5 (7)</td>
<td>5 (7)</td>
<td>5 (7)</td>
</tr>
</tbody>
</table>

(Item ID: 34) Likert Scale

3. Does your department support acquisition and implementation of computer technology in the classroom? (Where 0 is no support and 5 is strong support).

0 (1) 3
1 (2) 3
(Item ID: 35) Check All That Apply

4. With reference to providing support for the implementation of computer and other media technologies in my teaching, my department: (Please click on all that apply)

- Provides no support 5
- Encourages me philosophically 46
- Provides time for me to learn 18
- Provides resources 50
- Provides time for me to work in this area 17
- Provides funds for hiring students to help me in my work in this area 15

(Item ID: 46) Maxtrix - Likert

5. In the classes that you teach, how frequently do you use the following technologies?

<table>
<thead>
<tr>
<th>Videoconference</th>
<th>DVD</th>
<th>Software exercises</th>
<th>VHS</th>
<th>PowerPoint</th>
<th>Hypermedia (web pages that contain links to other pages, such as wiki pages)</th>
<th>Multimedia (video and audio accessed through text-based pages)</th>
<th>&quot;Drill &amp; Practice&quot; programs or tutorials</th>
<th>Online video</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all (1)</td>
<td>6</td>
<td>Not at all (1)</td>
<td>Not at all (1)</td>
<td>Not at all (1)</td>
<td>Not at all (1)</td>
<td>Not at all (1)</td>
<td>Not at all (1)</td>
<td>Not at all (1)</td>
</tr>
<tr>
<td>Once a semester (2)</td>
<td>3</td>
<td>Once a semester (2)</td>
<td>Once a semester (2)</td>
<td>Once a semester (2)</td>
<td>Once a semester (2)</td>
<td>Once a semester (2)</td>
<td>Once a semester (2)</td>
<td>Once a semester (2)</td>
</tr>
<tr>
<td>A couple of times per semester (3)</td>
<td>2</td>
<td>A couple of times per semester (3)</td>
<td>A couple of times per semester (3)</td>
<td>A couple of times per semester (3)</td>
<td>A couple of times per semester (3)</td>
<td>A couple of times per semester (3)</td>
<td>A couple of times per semester (3)</td>
<td>A couple of times per semester (3)</td>
</tr>
</tbody>
</table>


**Matrix - Likert**

6. Rate the impact you believe each of the following technologies have to increase language acquisition in the classroom.” Range form 0 (No impact) to 5 (high impact).

<table>
<thead>
<tr>
<th>Presentation software (PowerPoint)</th>
<th>Hypermedia (Web pages that contain links to other pages, such as Wikipedia)</th>
<th>Multimedia (Video and audio accessed through text-based pages)</th>
<th>Blackboard group discussion chats</th>
<th>&quot;Drill &amp; Practice&quot; programs or tutorials</th>
<th>Online video</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 (1)</td>
<td>14</td>
<td>11</td>
<td>23</td>
<td>0 (1)</td>
<td>0</td>
</tr>
<tr>
<td>1 (2)</td>
<td>13</td>
<td>8</td>
<td>10</td>
<td>1 (2)</td>
<td>0</td>
</tr>
<tr>
<td>2 (3)</td>
<td>10</td>
<td>9</td>
<td>8</td>
<td>2 (3)</td>
<td>0</td>
</tr>
<tr>
<td>3 (4)</td>
<td>16</td>
<td>10</td>
<td>12</td>
<td>3 (4)</td>
<td>0</td>
</tr>
<tr>
<td>4 (5)</td>
<td>16</td>
<td>24</td>
<td>7</td>
<td>4 (5)</td>
<td>5</td>
</tr>
<tr>
<td>5 (6)</td>
<td>16</td>
<td>18</td>
<td>5</td>
<td>5 (6)</td>
<td>5</td>
</tr>
</tbody>
</table>

(Item ID: 64)
2. If you responded "other" to the previous item, please explain.

   Employment; Student Assistants

3. Did you receive any formal professional development in the use of technology during the past school year (2005-2006)?

   (Item ID: 33) Multiple Choice Radio Buttons

   No 65
   Yes 20

4. Indicate the degree to which your pre-service education prepared you to use technology for instruction? (Where 0 indicates not at all prepared and 5 indicate very well prepared).

   (Item ID: 36) Likert Scale

   0 (1) 27
   1 (2) 14
   2 (3) 8
   3 (4) 15
   4 (5) 16
   5 (6) 4

5. How proficient are you with the following instructional technologies? (Scale your proficiency from 0 to 5, where 0 is not proficient and 5 is very proficient)

   (Item ID: 37) Matrix - Likert

<table>
<thead>
<tr>
<th>Computers in general</th>
<th>DVD</th>
<th>Video disc</th>
<th>Software exercises</th>
<th>VHS videos</th>
<th>Power Point</th>
<th>Multimedia (Web pages that contain links to)</th>
<th>Multimedia (Video and audio access)</th>
<th>Onlines video</th>
<th>&quot;Drill &amp; Practice&quot; program</th>
<th>Prepar materials for delivery via podcasts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0 (1) 3 2</td>
<td>1 (2) 1 3 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>(1)</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>1</td>
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<td>4</td>
<td>(5)</td>
<td>3</td>
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<td>5</td>
<td>(6)</td>
<td>2</td>
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</tbody>
</table>
Use of Technology Outside of the Classroom and Among the Students
(ID: 5; child number 4)

(Item ID: 55) Maxtrix - Likert

1. As homework for the classes that you teach, how frequently do your students use each of the following technologies:

<table>
<thead>
<tr>
<th>Technology</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video disc</td>
<td></td>
<td></td>
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<tr>
<td>DVD</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Software exercises</td>
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<tr>
<td>VHS videotapes</td>
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<tr>
<td>PowerPoint</td>
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<td></td>
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<tr>
<td>Hypermedia (Web pages that contain links to other pages, such as Wikipedia)</td>
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<tr>
<td>Multimedia (Video and audio accessed through text-based pages)</td>
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<tr>
<td>&quot;Drill &amp; Practice&quot; programs or tutorials</td>
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<tr>
<td>Online video</td>
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<td></td>
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<tr>
<td>Podcasting (using Apple iPod or MP3 player)</td>
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</table>

<table>
<thead>
<tr>
<th>Frequency:</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Once a semester</td>
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<td></td>
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<tr>
<td>Occasionally</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Regularly</td>
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<td></td>
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<td></td>
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<tr>
<td>Always</td>
<td>5</td>
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<td></td>
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</tr>
</tbody>
</table>

54
(Item ID: 71) Maxtrix - Likert

2. For each of the following questions please indicate the degree to which you disagree (1) or agree (5):

<table>
<thead>
<tr>
<th>If each student were to own a personal computer, it would encourage me to implement more instructional technology into my language class curriculum.</th>
<th>In my opinion, majors in the humanities should be required to own a personal computer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 (1)</td>
<td>19</td>
</tr>
</tbody>
</table>
3. Rate the degree to which the following are impediments to your assignment of technology-based activities as homework in the courses that you teach (where 0 is no impediment and 5 represents a significant impediment):

<table>
<thead>
<tr>
<th>Teacher’s lack of expertise</th>
<th>Student’s lack of expertise 0 (1)</th>
<th>Quality materials</th>
<th>Availability of software</th>
<th>My anxiety towards technology</th>
<th>Lack of financial support from the university</th>
<th>Not enough time to keep current</th>
<th>My lack of training</th>
<th>Lack of personal computers among my students</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 (1)</td>
<td>2</td>
<td>2</td>
<td>3 (4)</td>
<td>1 (2)</td>
<td>2 (3)</td>
<td>1 (2)</td>
<td>1</td>
<td>2 (3)</td>
</tr>
<tr>
<td>1 (2)</td>
<td>9</td>
<td>1 (2)</td>
<td>2 (3)</td>
<td>3 (4)</td>
<td>1 (2)</td>
<td>2 (3)</td>
<td>1</td>
<td>2 (3)</td>
</tr>
<tr>
<td>2 (3)</td>
<td>7</td>
<td>3 (4)</td>
<td>3 (4)</td>
<td>4 (5)</td>
<td>4 (5)</td>
<td>4 (5)</td>
<td>4</td>
<td>4 (5)</td>
</tr>
<tr>
<td>3 (4)</td>
<td>9</td>
<td>4 (5)</td>
<td>4 (5)</td>
<td>5 (6)</td>
<td>5 (6)</td>
<td>5 (6)</td>
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<td>5 (6)</td>
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<tr>
<td>4 (5)</td>
<td>1</td>
<td>5 (6)</td>
<td>5 (6)</td>
<td>5 (6)</td>
<td>5 (6)</td>
<td>5 (6)</td>
<td>5</td>
<td>5 (6)</td>
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<tr>
<td>5 (6)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Users: 119
Appendix C

Questions to Analyze the Data

New variables:

**TechUseClassroom** = Freq_Class_VD + Freq_Class_DVD + Freq_Class_Software + Freq_Class_VHS + Freq_Class_PowerPoint + Freq_Class_Hypermedia + Freq_Class_Multimedia + Freq_Class_Online_Video

**TechUseHWInput** = HW_DVD + HW_VD + HW_VHS + PP + HW_Web + HW_MM + HW_Tech_Use + HW_Online_video + HW_Podcasting.

**ImpedTeacherTechUse** = Imped_Tech_Avail_Classroom + Imped_Quality_materilas + Imped_Avail_Software + Imped_Anxiety + Imped_Financial_Support + Imped_Time + Imped_Training + Imped_Student_PC.

**AvailTechClass** = Avail_internet + Avail_Television + Avail_DVD_player + Avail_Online_Video + Avail_Doc_Camera + Avail_Electronic_Blackboard + Avail_Overhead + Avail_LCD.

**TeachProf** = Teacher_Prof_Computers + Teacher_Prof_Videodisc + Teacher_Prof_DVD + Teacher_Prof_Software + Teacher_Prof_VHS + Teacher_Prof_PowerPoint + Teacher_Prof_Hypermedia + Teacher_Prof_Multimedia + Teacher_Prof_Technology + Teacher_Prof_Online_video + Teacher_Prof_Prepare_podcasting

For the scale Cronbach’s alpha = .91 (that is very reliable, internal constancy is very high

**ImpactTeach** = Impact_Class_Powerpoint + Impact_Class_Hypermedia + Impact_Class_Multimedia + Impact_Class_Black + Impact_Class_Online_Video + Impact_Class_CAI.

**Classroom Section**

Type I questions:

1. What is the effect of teachers' proficiency with Instructional Technology as measured by TeachProf upon the use of Instructional Technology in the classroom as measured by TechUseClassroom?
2. What is the effect of teachers' anxiety towards technology use as measured by Imped_Anxiety upon the use of Instructional Technology in the classroom as measured by TechUseClassroom?

3. What is the effect of technology availability in the classroom as measured by AvailTechClass upon the use of Instructional Technology in the classroom as measured by TechUseClassroom? (This may not be very interesting, given that the correlation is low.)

4. What is the effect of the “lack of personal computers among students” as measured by imped_HW_Lack_of_student_com upon the use of Instructional Technology in the classroom as measured by TechUseClassroom? (This may be not be very interesting, given that the correlation is low.)

5. What is the effect of teacher's lack experience (years of experience teaching) as measured by Years_exp_teach upon the use of Instructional Technology in the classroom as measured by TechUseClassroom?

6. What is the effect of not having enough time current as measured by Imped_time upon the use of Instructional Technology in classroom as measured by TechUseClassroom?

7. What is the effect of teacher’s lack of quality materials measured by Imped_quality_materials upon the use of Instructional Technology in classroom as measured by TechUseClassroom?

Availability and Implementation of Technology in the Classroom

6. **Who among BYU instructors** (level of education, department, language, personal training,) **uses IT in their courses less frequently?**

BYU instructors =Y; level of education, etc… =X

Regression

7. **Which types of Instructional Technology (IT) are teachers have available in the classroom?**

   Computer that is connected to the Internet
   Television
   DVD player
   Online video
   Document camera
   Electronic blackboard
Overhead projector
Data projector (such as LCD Projector for computer and video)

Teacher’s exposure = Y;

8. **What type of technology teachers find most useful in teaching L2 classes?**

   Computer that is connected to the Internet
   Television
   DVD player
   Online video
   Document camera
   Electronic blackboard
   Overhead projector
   Data projector (such as LCD Projector for computer and video)

9. **Which type of IT is not available for BYU instructors?**

   Computer that is connected to the Internet
   Television
   DVD player
   Online video
   Document camera
   Electronic blackboard
   Overhead projector
   Data projector (such as LCD Projector for computer and video)

10. **Do instructors overall receive support (measured by Department Support) from their Language Departments?** (IF so, which department offers more frequent support to their employees? -not sure if we really need this question!)

    Asian and Near Eastern
    Center for Language Studies
    Classics, and Comparative Literature
    French and Italian
    Germanic and Slavic Languages
    Linguistics and English Language (TESOL teaching or other language courses)
    Spanish and Portuguese

   **How many instructors (%) had any form of professional training in the use of technology during the past school year**
Works Cited


<http://ott.educ.msu.edu/tec/R&D/SITE98/site98wh.html>


<http://www.usask.ca/education/coursework/802papers/machnaik/index.html>


