AAUSC Issues in Language Program Direction 2011

Educating the Future Foreign Language Professoriate for the 21st Century

Heather Willis Allen
Hiram H. Maxim
Editors

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Editors

Publisher: Beth Kramer

Editorial Assistant: Laura Kramer

Media Editor: Morgen Murphy

Marketing Program Manager: Caitlin Green

Manufacturing Planner: Betsy Donaghey

Rights Acquisition Specialist: Mandy Groszko

Design and Production Services: PreMediaGlobal

Library of Congress Control Number: 2011938980

ISBN-13: 978-1-133-31278-9

ISBN-10: 1-133-31278-0

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Boston, MA 02210
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Printed in the United States of America
1 2 3 4 5 6 7 15 14 13 12 11

Chapter 10

Investigating Foreign Language Graduate Student Instructors' Perceptions and Use of Technology in the Classroom

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Introduction

The 2007 MLA Report addressed a number of issues related to the way foreign language (FL) departments in the United States educate undergraduate students. The report suggests that FL majors, by the time they finish their degrees, should have acquired "translingual and transcultural competence" (p. 3)—knowledge that not only allows students to effectively communicate with speakers of the FL but also provides for a profound understanding of the facets that make up its culture(s). The MLA Committee put forth several curricular suggestions aimed at promoting these new kinds of thinking and learning. Among them, they suggested that FL programs adopt curricula that reconceptualize language learning as something that occurs across content areas (e.g., history, politics, literature, film, linguistics) and encourages students to be reflective at every level of study. While the report lacked specificity regarding graduate student instructor (GSI) professional development (Allen & Negueruela-Azarola, 2010; Pfeiffer, 2008; Schectman & Koser, 2008), it did point to possible pedagogical practices which GSIs can utilize to meet the aforementioned goals.

One recommendation indicated that "graduate studies should provide substantive training in language teaching and in the use of new technologies" (MLA, 2007, p. 7). This particular recommendation reflects a growing concern about the ability to meet future demand for higher education in the United States. Specifically, the total number of undergraduate students in the United States is projected to increase by 13 percent between 2007 and 2018 (National Center for Education Statistics, 2007). Blake (2008) and Musumeci (2011) stated that meeting this demand will be difficult based on how classrooms are currently configured and suggest that FL programs will need to rely on technological applications to more efficiently deliver course content. Recent trends in technology use among U.S. adolescents also show that, on average, these students own 3.5 electronic devices, are more likely than adults to access music and e-books via an MP3 player, and increasingly access the Internet via cell phones or similar mobile devices. In addition, a large number of U.S. teenagers make use of technologies such as social networking sites (e.g., Facebook), micro-blogging tools such as Twitter, and wikis (Lenhart, Purcell, Smith, & Zickuhr, 2010).

Many of these technological applications, termed Web 2.0 tools, allow learners to create and manipulate content online instead of merely reading or viewing it. Some have investigated how these interactive tools can be applied to FL learning contexts to enhance the ways in which instructors teach and students learn the FL (Lomicka & Lord, 2009). As such, technology will not only be an integral part of how we educate FL majors and minors in the United States, but will also be a vital tool for GSIs in their capacity as the future FL professoriate as it facilitates the realization of the goals outlined in the MLA Report.

In this chapter, I present the results of a survey project that attempts to understand how GSIs in a number of FL programs in 12 U.S. universities perceive and use Web 2.0 tools in their classrooms and personal lives. The study also seeks to gather information from GSIs regarding the amount and type of training received in FL programs related to using technology in courses taught. Additionally, the study investigates what variables facilitate or inhibit their ability to incorporate technological applications in the FL courses GSIs are assigned to teach. I present descriptive quantitative analyses of participants' responses to the survey coupled with a qualitative examination of their answers to open-ended survey questions. The chapter concludes with a discussion about the significance of the findings in light of the recommendations of the 2007 MLA Report and puts forth suggestions about how to better prepare GSIs to meet their future professional demands as FL instructors and researchers.

Literature Review

While the past decade has witnessed a proliferation of empirical research investigating how technological applications affect FL acquisition processes (e.g., Arnold et al., 2009; Belz & Thorne, 2006; Ducate & Arnold, 2006; Thoms, Liao, & Szustak, 2005) along with studies that describe various social networking and Web 2.0 tools and how they can be applied to FL learning and teaching contexts (e.g., Lomicka & Lord, 2009), little attention has been given to researching how FL GSIs are prepared to incorporate specific Web 2.0 technologies in their classrooms. Specifically, studies that investigate issues related to computer-assisted language learning (CALL) and FL pedagogy have primarily examined how technology is perceived and used by K–12 teachers (Cope & Ward, 2002; Cuban, 1998, 2001; Cummings, 2005), FL learners at secondary and postsecondary levels (Cope & Staehr, 2005; Nowaczyk, 1998; Stepp-Greany, 2002; Thoms, 2011), pre- and in-service (i.e., undergraduate) teachers (Anderson & Maninger, 2007; Egbert, 2006; Kessler, 2006, 2007; Wong & Benson, 2006), and postsecondary FL instructors (Arnold, 2007; Bell, 2005). While some work related to how FL GSIs perceive and make use of CALL in their teaching has been carried out via case studies (Burnett, 1997, 1998, 1999; Zapata, 2002), more work is needed to better understand how this particular demographic is trained to use technology in light of new/emerging Web 2.0 tools.

The 2007 MLA Report has served as an important vehicle by which to stimulate discussion and begin the process of articulating how U.S. collegiate FL programs

can improve to better meet the linguistic and (inter)cultural demands of FL students in the twenty-first century and beyond, yet much empirical work remains to be done in CALL and GSI preparation. GSIs need to use CALL in their future classrooms to better equip undergraduate students to enter a multicultural and global work place. However, before reform can be made to adequately prepare them to do so, it is first necessary to understand how today's GSIs perceive the use of technology in teaching and to fully examine the reasons why they do or do not incorporate Web 2.0 technologies in the classroom.

Benefits of CALL in FL Learning

The number of research studies investigating the effects of using technology to teach or learn a FL has significantly grown over the past 20 years. While FL learning and teaching in the United States has always, to some extent, relied on technology (e.g., traditional language labs that made use of cassette and video tapes), the advent of personal computers and the subsequent widespread use of the Internet in the 1990s led many FL practitioners to begin exploring ways in which they could make use of computer-based language learning programs in their classrooms (Warschauer, 1996). A number of computer-based programs emerged at this time, and FL instructors started to experiment with computer-mediated applications. In addition to an increasing interest in CALL during the early 1990s, the field of second language acquisition (SLA) was also becoming a more well-defined area of inquiry.

The concomitant development of the areas of SLA and CALL over the last two decades has resulted in a number of studies that suggest using technology when teaching a FL can facilitate language acquisition. Many studies have made use of a variety of theoretical lenses to interpret their data, but the majority of CALL research has focused on its linguistic benefits to learners. For example, research examining synchronous and asynchronous computer-mediated communication has investigated linguistic and grammatical issues (e.g., Abrams, 2003; Beauvois, 1998; Belz & Kinginger, 2003; Lee, 2002; Salaberry, 2000), improvement of oral and written proficiencies (e.g., Dussias, 2006; Payne & Ross, 2005; Tudini, 2005), and ways in which students negotiate for meaning and co-construct knowledge (e.g., Blake, 2000; Blake & Zyzik, 2003; Chun, 1994; Smith, 2003; Thorne, 2003).

Another well-documented positive effect of CALL on FL students' learning is the opportunity to interact with native speakers to learn more about their culture(s). Via meaningful interactions with FL users and authentic cultural content, CALL allows learners to develop intercultural communicative competence (Lomicka, 2006; Thorne & Payne, 2005). While entire volumes have been dedicated to ways in which technology can facilitate how learners develop cultural competency (e.g., Belz & Thorne, 2006), several studies have also looked at specific cultural/intercultural issues via the use of e-mail exchange (Kern, 1996; O'Dowd, 2003), blogs (Ducate & Lomicka, 2008; Elola & Oskoz, 2008), and telecollaborative projects (Belz, 2003; Furstenburg et al., 2001) along with work that investigates how practitioners can implement CALL-based projects to teach culture (Blyth, 1999; Dubreil, 2006; Levy, 2007).

In sum, research on CALL has resulted in various benefits to FL learners and instructors. For the latter, work on CALL has helped them create computer-mediated activities that facilitate learners interacting with each other in and outside of the classroom, push them to negotiate meaning, and introduce them to cultural information via native speakers and authentic content. Learners have equally benefitted from CALL-related activities in the FL classroom, as they have been able to improve their linguistic and cultural competencies in an enhanced and more engaging way.

Given the aforementioned benefits of CALL coupled with the call put forth by the 2007 MLA Report to educate undergraduate FL students in the United States to respond to the globalized world of the twenty-first century, it is necessary to turn our attention to understanding how postsecondary educators prepare GSIs to address these challenges. GSIs are a significant piece of the professional development puzzle put forth in the MLA Report. I now briefly review some of the work that has been done regarding GSI education and technology.

FL GSI Education and Technology

In universities that offer multisection lower-level FL courses, GSIs are typically assigned to teach them. GSIs, or graduate students pursuing an M.A. or Ph.D. funded via teaching assistantships, have primary responsibility for teaching the FL courses and are not merely assistants to another instructor. Thus, they are solely in charge of day-to-day teaching in introductory and intermediate-level FL courses.

Many university FL programs that rely on GSIs expect them to participate in presemester orientation activities and to enroll in a FL methodology course during their first semester of graduate work. While both the orientation and course may include sessions that highlight ways in which technology can be used in FL teaching, oftentimes the information is cursorily presented, and rarely do students have an opportunity to thoroughly experiment and practice with technological applications in their classrooms (Lord & Lomicka, 2004).

While previous research found that the majority of GSIs in the United States receive insufficient amounts of training regarding how to implement different technologies (Muyskens, 1997), some training efforts have proven to be fruitful. For example, Rava and Rossbacher (1999) provided details about a technology seminar that was team-taught by two faculty members who realized that their GSIs needed more information about ways to include technology in the FL classroom.

The authors stated that the primary reason to offer the seminar was to better prepare students for future professional endeavors, since many job openings have "explicit requests for applicants experienced in multimedia technologies" (1999, p. 64). Today—over 10 years later—the majority of job announcements in U.S. collegiate FL programs usually mention that it is preferred that the candidate have experience with and knowledge of technology in teaching. Rava and Rossbacher concluded their article by reporting questionnaire results indicating that, in general, students' views about using technology in their teaching had changed for the better after the seminar and experimenting with various kinds of technology. However, scant information was made available in the article regarding the survey

itself, since the primary purpose of the paper was to explain why and how the two faculty members configured such a course for the GSIs.

In a similar vein, Lord and Lomicka (2004) reported on a project called Technology in Foreign Language Education that involved the creation of a graduate seminar at two separate institutions. The authors collaboratively worked to design and teach the seminar at both universities during the same semester. The course provided FL GSIs with the opportunity to interact with each other by familiarizing themselves with and using applications such as text-based chats, an asynchronous discussion board, and a MOO (i.e., a multiuser, object-oriented virtual space) via a shared course Web site. Another component of the collaborative venture involved the participation of invited experts in SLA, FL pedagogy, and CALL in the virtual discussions. The authors reported on student reactions to the course via surveys that indicated that most students who took the seminar felt more comfortable afterward using technologies such as creating Web pages and using discussion boards. Many also indicated that they gained a better understanding of the connection between SLA theory and technology.

GSI Perceptions of Technology

Beyond publications on methods of providing the technology training to FL GSIs, it is also important to analyze their feedback about the training they received, a focus of several studies. Burnett (1997, 1998, 1999) and Zapata (2002) both carried out studies that addressed a number of issues regarding GSI training in CALL and views about technology. Burnett's (1997) dissertation work involved case studies of two GSIs teaching an intermediate French language course; one had considerable experience with technology while the other was inexperienced. Both initially indicated that they integrated technology in their classrooms, but via class observations and additional interviews, Burnett showed that for one participant, teaching in a computer-equipped classroom mitigated his use of the FL, as he explained in English the technical aspects of his activities. As such, classroom activities frequently privileged computer literacy over linguistic proficiency. As for the other GSI, her negative attitude about using technology, in addition to her difficulties with the technology itself while teaching, created a context in which technology was regarded as more of a hindrance rather than something that facilitated teaching.

Similarly, Zapata (2002) described the role of technology for five novice GSIs of Spanish. Via interviews and class observations, Zapata suggested that several GSIs' perceptions and use of technology in teaching were related to the informants' participation in different communities of practice. This ultimately led four of them to make limited or no use of technology in their courses while the other participant used technology but associated it solely with the Internet. It is also important to note that Zapata investigated the use of the following technologies in her study: computer hardware and software; VCRs; and tape/CD recorders/players—all of which predate Web 2.0 tools.

The work of Burnett (1997) and Zapata (2002) is important in that both studies represent efforts to understand how GSIs perceive the use of technology while contrasting their opinions with classroom-based observations and interviews.

Further, both studies take a qualitative, context-specific view of GSI education and its relation to CALL. However, both were carried out before the emergence of Web 2.0 tools. This current project therefore seeks to more fully understand how GSIs perceive and make use of technology (especially Web 2.0 tools) in the courses they teach and in their personal lives.

Research Design

The following three research questions are investigated in this study:

1. What is the nature of the CALL training that GSIs receive from their programs?
2. Do GSIs make use of Web 2.0 tools in the FL courses they teach?
3. What are the variables that affect whether or not GSIs make use of technology in teaching?

Participants

One hundred fifty-four participants completed the survey; 68 percent were female and 32 percent male. The average age of respondents was 31 years. Seventy-three percent of the GSIs indicated that they were U.S. citizens and had been living in the country for more than five years, while 27 percent indicated that they were non-U.S. citizens. The majority of participants indicated that their first language was English (55 percent), followed by Spanish (25 percent), Portuguese (4 percent), French (3 percent), Chinese (3 percent) and other languages including Catalan, Basque, German, Greek, Italian, and Russian (collectively 4 percent); the remaining respondents indicated that they were true bilinguals (6 percent).

One hundred seven respondents (69 percent) were pursuing a Ph.D., while the other 47 (31 percent) were working on an M.A. degree. The majority of respondents (64 percent) indicated that they were pursuing graduate work in FL literature, 15 percent in FL linguistics, 14 percent in SLA, 5 percent in FL education. A small number (2 percent) were working in other areas such as border studies and comparative literature. When asked about which FL they were assigned to teach, 66 percent indicated that they taught Spanish, 15 percent French, 5 percent German, 3 percent Portuguese, 3 percent Chinese, 2 percent Italian, and less than 1 percent each Japanese and Russian. Just over 5 percent indicated another language (e.g., Catalan, Greek, Korean, Latin, Swedish). In all, respondents represented a diverse group of GSIs in a number of different U.S. collegiate FL programs.

Data Collection

Data collection for this project took place in summer 2010. An online survey was created and distributed to over 300 graduate students at 12 universities. The researcher visited the FL department Web sites of various U.S. universities to ascertain graduate students' e-mail addresses in order to invite them to take the survey, and sent an e-mail to each GSI whose contact information appeared.

The GSIs were either current students or recent graduates from a FL M.A. or Ph.D. program. Of the 300 students invited to fill out the survey, 154 students completed it by the deadline, for a response rate of 51 percent.

The 12 universities whose graduate students were invited to participate in this study were chosen to provide for a representative sample of U.S. institutions. The researcher wanted to survey participants from distinct geographical locations to avoid any institutional or regional bias. Therefore, GSIs from the following universities were invited to participate: University of Arizona; Boston University; University of California, Davis; University of Illinois at Urbana-Champaign; University of Iowa; University of Minnesota Twin Cities; University of New Mexico; University of North Carolina at Chapel Hill; Pennsylvania State University; University of Texas at Austin; University of Virginia; and University of Washington.

Participants completed an 18-question online survey (see Appendix A) anonymously. The first section of the survey consisted of eight questions and was designed to elicit background information about each participant (age, sex, type of graduate degree being pursued, FL taught at his/her institution, etc.). The second section included 10 questions that explored issues related to technology training the GSI had received along with questions that attempted to gauge participants' perceptions and use of technology in the FL classroom and their personal lives.

It should be noted here that several survey questions asked students about Web 2.0 tools. Despite recent attempts to define Web 2.0 (Jones, 2008), researchers and software experts in CALL have yet to agree on a precise definition. Some have suggested that it be operationalized as any technology that affords students the "potential to move from the conventional epistemic stance of knowledge consumer to that of knowledge producer" (Sykes, Oskoz, & Thorne, 2008, p. 530), such as when learners produce language via wikis and blogs. Others suggest that a Web 2.0 tool is more about encouraging online collaboration among learners via social networking sites and other open-access applications (Lomicka & Lord, 2009). While the Web 2.0 debate is outside the purview of this study, it is important to know that Web 2.0 in this study is defined as those technological applications that allow learners to create with the FL and/or meaningfully interact with each other online. Some technologies listed in this study's survey such as Twitter, blogs, Facebook, wikis, and Second Life are operationalized as Web 2.0 tools.

Data Analysis

Data analysis consisted primarily of descriptive statistical analysis of participants' answers to survey questions. While most questions were forced-choice, some included the option of providing additional written answers, including several that were open-ended and allowed participants to respond as much as they felt necessary. Participants' responses to open-ended questions were first coded based on predetermined categories. The preliminary categories were created based on the anticipated answers to the various open-ended questions. The researcher then instructed a second rater to code participants' answers based on those categories. However, after both the researcher and rater carried out an initial pass of the data, additional

categories were added based on participant responses. Once the new categories were added, both the researcher and the rater individually coded participants' responses to open-ended questions a second time. The second ratings were then compared to establish interrater reliability at .90. The few discrepancies that did result after the second rating were discussed and resolved by the researcher and the rater, and the final categorization of participants' responses is presented in this study.

Results

Research Question One: What is the nature of CALL training that GSIs receive?

To answer the first research question, respondents completed three different survey items related to the training received at their university. An overwhelming majority (87.9 percent) of respondents indicated that their GSI orientation had included sessions on using technology in teaching. FL methods courses were also a source for technology training, as many respondents (70.9 percent) indicated that they had learned about technology in that specific course. Less than half of the respondents (41.1 percent) indicated that they received technology training during their weekly, biweekly, or monthly GSI meetings. Finally, only 2.8 percent of respondents indicated that they received no formal training.

Some GSIs provided additional information about the nature of their training and wrote that they elected to take courses in CALL and FL learning and teaching beyond the FL methods course. Others indicated that some training came from outside the FL department, for example, delivered by university library staff, the information technology services department, or workshops by various organizations on their campus such as a university writing center.

A follow-up question asked respondents to identify any technological tools that were addressed during their formal training experiences. Table 10.1 below illustrates the types of technologies presented to students along with the correlating percentage response rates for each. The data indicate that three technologies—PowerPoint presentations, Web sites that target grammatical and lexical issues, and discussion boards—were the most common types of technology covered in the training offered. Respondents indicated that PowerPoint presentations were addressed the most (73 percent), followed by Web sites that target grammatical and lexical issues (64.5 percent), and discussion boards (62.4 percent). While these tools can be quite useful, they are limited in that they do not allow students to create with the language when compared to other, more interactive Web 2.0 applications. Although discussion boards are not traditionally defined as a Web 2.0 tool (Lee, 2009), they do have the potential to promote more interaction among learners when compared to PowerPoint presentations and grammatical and lexical Web sites. However, it is worth noting that two of the three most commonly addressed technologies limit students' abilities to create and interact with FL content in a meaningful way while all three are not traditionally defined as Web 2.0 tools.

Table 10.1. Types of Technologies Addressed in Formal Training Opportunities

Technologies	Response percentage
PowerPoint presentations	73.0
Web sites that target grammatical and lexical issues	64.5
Discussion boards	62.4
Wikis	32.6
Blogs	31.2
Text-based chats	31.2
Social networking sites (e.g., MySpace or Facebook)	22.0
Podcasts	18.4
Virtual gaming software	18.4
Video-based chats (e.g., Skype Mixxer)	17.7
Twitter	10.6
Google Earth	9.9
Other	23.4

As seen in Table 10.1, the rest of the technologies received considerably lower attention during GSIs' training experiences. Of these, one can note that wikis (32.6 percent), blogs (31.2 percent), text-based chats (31.2 percent), and social networking sites such as MySpace and Facebook (22.0 percent), podcasts (18.4 percent), virtual gaming software (18.4 percent), video-based chats such as Skype Mixxer (17.7 percent), Twitter (10.6 percent), and Google Earth (9.9 percent) were covered in some participants' training activities. However, these applications, several of which are Web 2.0 tools, were not addressed as often during GSIs' training experiences as non-Web 2.0 tools.

Finally, several respondents provided additional information regarding various technologies included in training experiences not listed in the survey. For example, many GSIs indicated that course management tools such as Blackboard, WebCT, and Moodle were discussed in technology training sessions. Other technologies mentioned were YouTube, Live Mocha (an online language learning community chat room), Macromedia Breeze (a collaborative Web-conferencing tool), Audacity (an audio sound editor), and iMovie (film editing software).

A related survey question attempted to determine whether the GSIs felt that the formal training that they had received was sufficient in helping them feel confident in using technology in teaching. Findings indicated that 39.7 percent felt confident in using technology in teaching, 12.8 percent felt underprepared to incorporate technology in teaching, and 47.5 percent had mixed feelings about their preparedness. As for this last group, many provided additional information to express what they meant by mixed feelings, and two types of responses became apparent in further analysis of this item. The first category of responses coded as "Outside Training" dealt with students indicating that the training from their

FL program was helpful but insufficient to make them feel comfortable using technology in their courses. GSIs indicated that they looked to other peers, programs, departments, or classes at their university for additional opportunities for technology training. In some cases, they looked for training opportunities outside their institution. Sample responses included statements such as "I have received more training at workshops at conferences" and "Best information was from other TAs who had negotiated the technology on their own and shared their experiences" and "The department itself only offered one training. There are multiple training programs for teaching with technology offered throughout the university."

A second category, labeled "Limited Information," came from GSIs' answers regarding why they continued to feel uncomfortable using technology in their courses despite receiving training in it from their program. Answers revolved around the notion that the training they had received was too narrowly focused and therefore inadequate. One student stated, "A bulk of the training is specific to the Web-based platforms that students use to complete their workbook. Other technologies such as skype [*sic*] and social net-working [*sic*] are discussed within groups of interested students." Another from this category expressed that "The training I received was very basic and specific to a particular introductory course."

Respondents' answers to the three survey questions summarized above help to answer the first research question investigated in this study. The majority of participants indicated that they did receive preparation in learning how to teach with technology, primarily during an orientation workshop or a FL methods course. Only a few GSIs indicated that they did not receive similar preparation. However, many indicated that while they had received some technology training early in their teaching experiences, much of the training was inadequate. Therefore, some indicated that they looked to other sources outside of their department or sought it out elsewhere. The data also suggest that GSIs primarily received training on more traditional technologies versus more participatory applications that are typically defined as Web 2.0 tools.

Research Question Two: Do GSIs make use of Web 2.0 tools in the FL courses they Teach?

To answer the second research question, one survey question asked respondents to indicate how often they use a variety of technologies when teaching the FL course(s) that they are normally assigned (see Table 10. 2 for a summary of responses). As indicated in Table 10.2, 59.1 percent of respondents indicated that they incorporate PowerPoint presentations every week, while 28.1 percent indicated that they use Web sites that target grammar and lexical issues each week. The data also demonstrated that the third most frequently used technological application is discussion boards, as 13.1 percent of respondents indicated that they use them on a weekly basis in teaching.

Given the emphasis in GSI training on more traditional technologies, it is not surprising to learn that PowerPoint presentations, Web sites that target grammatical and lexical issues, and discussion boards are the three technologies that are most frequently used, and none are considered a Web 2.0 tool. However, further analysis of the data shows some interesting trends regarding

Table 10.2. Frequency of Use of Technologies in GSIs' FL Courses, Expressed in Percentage

Technology	Weekly	Every other week	Once a month	2–3 times a semester	Once a semester	Never
Blogs	6.9	5.4	5.4	5.4	5.4	71.5
Discussion boards	13.1	12.4	7.3	12.4	9.5	45.3
Google Earth	0.8	3.1	1.6	7.1	3.9	83.5
Podcasts	1.6	3.3	4.9	5.7	4.1	80.3
PowerPoint presentations	59.1	15.3	2.9	7.3	7.3	8.0
Social networking sites	4.7	1.6	1.6	4.7	5.5	82.0
Text-based chats	10.1	1.6	2.3	9.3	5.4	71.3
Twitter	1.6	0.0	0.0	0.0	0.0	98.4
Video-based chats	3.1	0.8	3.9	1.6	6.2	84.5
Virtual gaming software	0.8	0.8	1.6	0.8	0.8	95.2
Gram. and lexical Web sites	28.1	20.7	12.6	11.1	8.1	19.3
Wikis	3.2	3.2	6.3	8.7	4.0	74.6

the use of the newer interactive technologies. For example, some Web 2.0 tools listed in the survey are used at least every other week or more frequently by GSIs. Further, 12.3 percent of respondents indicated that they used blogs every other week or more frequently while 11.7 percent said that they make use of text-based chats in their courses just as often. Additionally, 6.4 percent of respondents indicated that they use wikis, social networking sites such as Facebook (6.3 percent), and podcasts (4.9 percent) every other week or more frequently in their classrooms. Table 10.2 also reveals that the Web 2.0 tools that are utilized least often by GSIs in their courses are virtual gaming software applications and Twitter.

While the information in Table 10.2 helps to answer research question two, an additional question was posed to respondents wherein they were asked how often they used the same technologies in their personal lives for nonacademic purposes. The researcher included this related question to (a) find out if the respondents used Web 2.0 tools in their personal lives, and (b) determine how often they made use of them for nonacademic purposes. Table 10.3 contains respondents' answers to this question.

While many trends displayed in Table 10.2 concerning how frequently GSIs use these technologies are also present in Table 10.3, the data do show notable differences between both contexts. While the reasons why those differences exist remain outside the scope of this study, it is interesting to note that the two most frequently used technologies by GSIs in their personal lives are social networking sites and text-based chats, two technologies considered Web 2.0 tools. The data

Table 10.3. Frequency of Use of Technologies in GSIs' Personal Lives for Nonacademic Purposes, Expressed in Percentage

Technology	Weekly	Every other week	Once a month	2–3 times a semester	Once a semester	Never
Blogs	29.4	11.8	5.9	6.6	9.6	36.8
Discussion boards	12.6	10.4	7.4	8.1	8.9	52.6
Google Earth	7.3	10.2	13.1	15.3	21.9	32.1
Podcasts	19.1	5.9	10.3	8.1	8.1t	48.5
PowerPoint presentations	24.1	7.3	7.3	15.3	10.9	35.0
Social networking sites	79.1	4.3	5.0	2.2	0.7	8.6
Text-based chats	50.0	12.3	6.5	2.2	2.9	26.1
Twitter	12.5	2.2	2.9	1.5	2.9t	77.9
Video-based chats	24.6	12.3	14.5	10.9	2.9	34.8
Virtual gaming software	0.7	3.0	2.2	3.0	3.7	87.3
Gram. and lexical Web sites	22.5	15.2	13.8	10.9	5.8	31.9
Wikis	28.1	18.5	10.4	6.7	4.4	31.9

also suggest that the GSIs also used various other Web 2.0 tools in their personal lives, but many of them were not used often. Several of the GSIs (77.9 percent) responded that they have never used Twitter, while 87.3 percent indicated that they have never used virtual gaming software.

In sum, research question two sought to determine whether FL GSIs used Web 2.0 tools in teaching, and the data suggest that some tools, such as blogs, text-based chats, and wikis were used in the respondents' FL classrooms. However, these tools were not used as frequently as traditional technologies. In contrast, the majority of GSIs indicated that they used Web 2.0 tools more often than traditional technologies for nonacademic purposes.

Research Question Three: What are the variables that affect whether GSIs make use of technology in their classrooms?

To understand any potential variables that may prevent GSIs from using technology in their FL courses, answers from another survey question were analyzed. A number of possible obstacles were presented to respondents, and they were asked to indicate which ones were factors that inhibited their ability to incorporate technology into the lesson plans for their course. Table 10.4 below displays respondents' answers to this question.

Table 10.4. Possible Factors That Inhibit GSIs' Ability to Incorporate Technology into Their FL Courses, Expressed in Percentage

Potential Roadblocks	Factor	Not a factor
I have limited time to dedicate to lesson plans.	67.6	32.4
My normally assigned room/building for my course prevents me from using technology (e.g., the room doesn't have a computer).	30.4	69.6
The language lab at my university is too small.	7.2	92.8
The language lab at my university has outdated hardware and/or software.	9.4	90.6
The textbook that I use has little to no premade online activities.	42.1	57.9
My limited understanding of technology.	25.7	74.3

While the results of this question are mixed, one can definitely note that time is a variable that inhibits GSIs' ability to incorporate technology into their FL courses. Specifically, 67.6 percent indicated that they have limited time to dedicate to lesson planning and, as a result, they are not able to incorporate technology. Three subsequent items related to possible physical barriers to teaching appeared in the survey, but an overwhelming majority did not indicate that these were a significant problem. Although some (30.4 percent) did say that their assigned classroom did not have a computer and, as a result, the amount and type of technology used was limited, a majority (69.6 percent) of respondents said that this was not an issue. Finally, some respondents (42.1 percent) did state that their textbook had little to no premade online activities and that this was a factor inhibiting their ability to incorporate technology.

Some students also provided additional clarification regarding their answers to the survey question in Table 10.4 along with other suggestions regarding possible obstacles. While many reiterated the fact that they were unable to include technology in teaching due to being assigned to a room without media, others stated that they had to follow structured lesson plans provided to them by their program, allowing them little room to incorporate technology. Similarly, some indicated that GSIs were not asked to participate in the creation of syllabi or to provide input regarding the approaches used in their FL programs and as a result they were unable to incorporate technology into their teaching.

Discussion

The overarching goal of this cross-institutional study was to investigate GSIs' perceptions about and use of technology in teaching FL courses. Given that some researchers have called for new ways to not only educate undergraduate FL students but also to address issues of educating the future FL professoriate (Allen & Negueruela-Azarola, 2010), coupled with the emergence of a plethora of

new technologies, the results of this study provide a glimpse of how technology is currently viewed and used by FL GSIs working in U.S. institutions of higher education.

The GSIs in this study did receive some technology training early in their FL programs. However, the majority of this training focused on less interactive applications as opposed to more engaging Web 2.0 tools. Interestingly, the respondents indicated that they primarily relied on using more traditional applications in the courses that they teach. However, findings also indicated that many GSIs were familiar with and used several Web 2.0 tools in their personal lives. Therefore, there appeared to be a disconnect between the amount and type of technologies used in and outside of their FL classroom by GSIs.

Although it is impossible to suggest that a causal relationship exists between the training GSIs receive and what tools they eventually use in the classroom, it is clear that technology training for FL GSIs could include more information about Web 2.0 tools along with ample opportunity to experiment with these technologies in classroom contexts. Additionally, we have seen that GSIs are not often able to use Web 2.0 tools in the courses they teach due to lack of time to create innovative lessons making use of these tools. To remedy this problem, GSIs could receive a course release and assist the FL program coordinator with the creation of activities that incorporate applications such as wikis, podcasts, or Twitter. Additionally, GSIs who are particularly well versed in newer technological applications could help structure course syllabi so that Web 2.0 tools are meaningfully integrated with the goals of the course.

Additional professional development opportunities that target the integration and use of CALL and Web 2.0 tools should be available to GSIs on an ongoing basis. In lean economic times, FL program coordinators need to look for creative ways to provide CALL-based professional development activities. One possible funding source to exploit is that of textbook publishers. FL program coordinators should request that publishers provide technology-oriented workshops at the beginning or end of each semester. In addition, presenters from outside the university could provide GSIs with the opportunity to learn about and experiment with new/emerging Web 2.0 tools. Similarly, webinars related to CALL that are often provided for FL program coordinators should also be extended to GSIs to provide them with technology-oriented training opportunities that they may not otherwise get. For GSIs and FL program coordinators working at universities that house national foreign language resource centers, training opportunities in CALL should be maximized as much as possible by these on-campus resources.

Taking these steps would help encourage and facilitate the use of Web 2.0 tools by GSIs in their FL courses, which, in turn, could improve the way in which undergraduates acquire FLs. With proper training and guidance, both GSIs and their students could benefit from more CALL-based activities via Web 2.0 tools. Equipping GSIs with these necessary and important technology-oriented skills should be a priority as we continue to prepare them for their professional lives.

Limitations and Directions for Future Research

This study has a number of limitations. First, the study would have benefitted from an expanded participant pool. Secondly, the study's analysis is limited to descriptive statistics. Thirdly, without analyzing GSIs' course syllabi, it is impossible to know whether the participants were severely restricted to using certain kinds of technologies in their courses or whether they freely chose to use one technology over another.

Some of the limitations of the study may also serve as possible future avenues for research in this area. Given the data collected in this study, the researcher was not able to provide more detailed information about the nature of the GSI training. Specifically, additional questions that targeted the way in which training is carried out at each university may have yielded more insights about why some GSIs make use of certain technologies in teaching. On a related note, future work could investigate the methods of technology training provided to GSIs who teach a less commonly taught language (LCTL). Given that many LCTL programs do not have an FL coordinator or lack discipline-specific training in the FL, this may affect the way in which CALL is used by GSIs in those programs.

As technologies continue to evolve and new tools are integrated in our academic, social, and personal lives, FL instructors who know little about these tools will need to learn how to use them or face the possibility of being replaced by others who do (Blake, 2008). The recommendations of the 2007 MLA Report, while imperfect, do help to point us in the direction of how to begin the process of readying GSIs to meaningfully integrate technology in the FL classroom. However, more empirical work will be needed to better understand the effectiveness of the training provided to them. Hopefully this study will stand as one contribution to that endeavor.

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Appendix A

Survey Questions

NOTE: SurveyMonkey was used to distribute the questionnaire. Due to space limitations, the questions appear here in revised format.

1. What is your sex?
2. What is your age?
3. What is your native language (if you are bi- or multilingual, please indicate which is language is your dominant language)?
4. Please indicate your status as a GSI (choose one): A. U.S. citizen and attending graduate school in the U.S.; B. International TA (i.e., non-U.S. citizen); C. Other (please explain).
5. Where are/were you pursuing your advanced degree (i.e., provide the name of your university)?
6. What advanced degree are you currently pursuing (or have recently pursued) at the institution where you are/were a TA (indicate one): A. M.A. degree; B. Ph.D. degree; C. Other (please explain).
7. Which of the following areas of specialization best describes your advanced degree (choose one): A. FL literature; B. FL linguistics; C. SLA; D. FL education; E. Other (please specify).
8. Which foreign language do you teach at your university?
9. What types of formal training have you received at your university (i.e., while working as a teaching assistant) regarding how to use/incorporate technology in your teaching (choose one): A. Training via TA orientation activities; B. Training via a FL methods course; C. Training during weekly, biweekly, or monthly TA meetings; D. No formal training; E. Other (please specify).
10. Thinking about the formal training that you received as a TA regarding the incorporation of technology in teaching of a FL, please select the types of technologies that were addressed in your training (choose all that apply): A. Blogs; B. Discussion boards; C. Google Earth; D. Podcasts; E. PowerPoint; F. Social networking sites; G. Text-based chats; H. Twitter; I. Video-based chats; J. Virtual gaming software; K. Web sites that target grammatical and lexical issues; L. Wikis; M. Other (please specify).
11. Was the training that you received at your university about how to use/incorporate technology when teaching your FL course sufficient in your opinion (choose one)?: A. Yes (I feel confident when using technology in my classroom due to the training that I received); B. No (I feel underprepared regarding how to use/incorporate technology in the FL course that I teach); C. Yes and no (The training provided me with some basic info. about the different technologies, but I need more before I attempt to incorporate them on a regular basis in my course).

12. How often do you use the following technologies in the FL course that you normally teach as a TA at your university (indicate frequency of "Every week," "Every other week," "Once a month," 2 to 3 times a semester," "Once a semester," "Never")?: Blogs; Discussion boards; Google Earth; Podcasts; PowerPoint; Social networking sites; Text-based chats; Twitter; Video-based chats; Virtual gaming software; Web sites that target grammatical and lexical issues; Wikis.
13. Please rank the reasons why you use/incorporate technology when teaching a FL at your university (1= primary/most important reason, through 7 = least important reason): I know a lot about technology and therefore, it's easy to incorporate; The textbook in the course that I teach uses several different technologies; The syllabus/structure of the course forces me to use technology in my teaching; Students react better to the course content via technology; Technology makes language teaching more enjoyable for me; Technology helps students to become more fluent in the FL; Technology makes my job easier.
14. Please indicate if any of the following factors inhibit your ability to incorporate technology into the lesson plans for your FL course at your university: I have limited time to dedicate to lesson plans; My normally assigned room/building for my course prevents me from using technology; The language lab at my university is too small; The language lab at my university has outdated hardware and/or software; The textbook that I use has little to no pre-made online activities; I have limited understanding of technology.
15. How often do you use the following technologies for personal use (indicate frequency of "Every week," "Every other week," "Once a month," 2 to 3 times a semester," "Once a semester," "Never")?: Blogs; Discussion boards; Google Earth; Podcasts; PowerPoint; Social networking sites; Text-based chats; Twitter; Video-based chats; Virtual gaming software; Web sites that target grammatical and lexical issues; Wikis.
16. On average, how many hours each day do you use one or more of the technologies mentioned in the previous question for personal use?
17. Please indicate your opinion about each of the following statements (indicate "Strongly agree," "Somewhat agree," "No opinion," "Somewhat disagree," or "Strongly disagree")?: Language learning primarily consists of learning grammar and vocabulary; Language learning is primarily about acquiring skills; Effective FL teaching methods include the use of a variety of technologies; The benefits of using technology outweigh any negative aspects; Being familiar with and using technology in the course I teach as a TA will better prepare me for my future career in academia.
18. If you have any other comments regarding the use of technologies in the FL classroom, the quality and amount of training you have received as a graduate student TA at your university, etc., please provide them here.