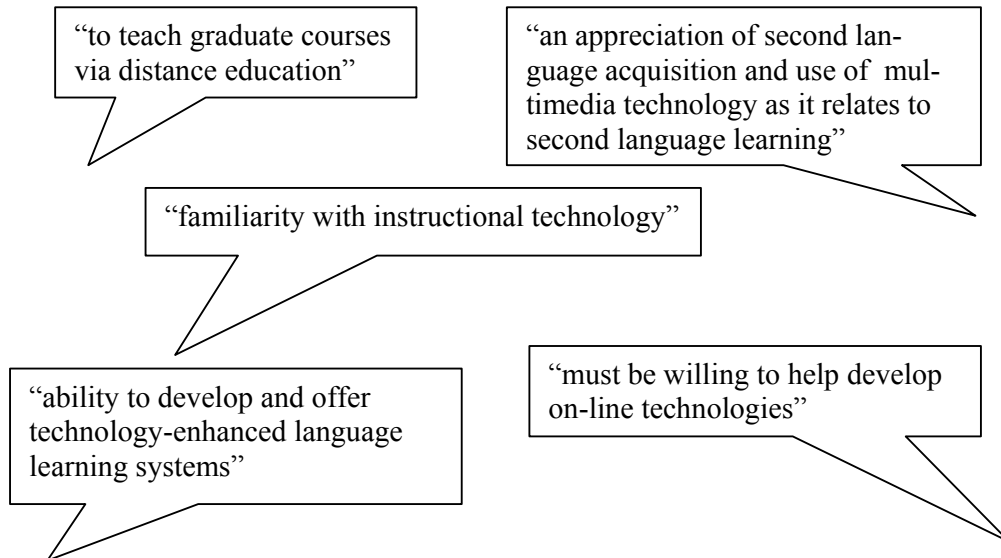


Integrating Technology in the German Class: What Kind of Preparation Do Graduate Student Instructors Need and Receive?

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Introduction



The above excerpts are taken from job descriptions for faculty positions in German in the 2008/2009 MLA Job Information List. Similar advertisements have appeared regularly on the job list over the past years and confirm the continuing interest from many departments to hire candidates who have some skill in computer-assisted language learning or other technological expertise across various specializations such as literature, culture studies, translation, or applied linguistics. Hence, what applies to new professors is also relevant to today’s graduate student instructors¹ in foreign language classes; they need both knowledge of foreign language pedagogy and technological literacy in order to deliver effective instruction and satisfy market demand. Most current textbooks today are accompanied by a variety of ancillary technological materials (student CD-ROMs, videos, online workbooks, and web pages). Classroom instruction is regularly supplemented with work in a computer lab, and increasingly incorporates chat and other forms of computer-mediated communication. Electronic grade books and classroom management tools such as WebCT and Blackboard are also often used to assist instructors in their daily work.

The questions that arise from this situation are whether graduate programs provide any or enough professional development for their graduate student instructors to enable them to implement these technological tools in their teaching and, if they do, how graduate programs go about training and preparing students for their future careers.

¹ The terms “graduate student instructor” and “graduate teaching assistant” are often used interchangeably. However, in the Humanities, graduate students rarely assist a professor but instead carry full responsibility for a class.

Review of Literature

Since the 1980s, there has been an increasing amount of scholarly literature on teaching assistant development and the training of future academics (Bernhardt & Hammadou, 1987). The profession has made large strides in improving teaching assistant supervision, for example, by founding professional organizations, such as the American Association of University Supervisors, Coordinators, and Directors of Foreign Language Programs (AAUSC) in 1980, which seek to advance foreign language instruction, strengthen development programs for graduate student instructors, and promote research in second language acquisition (www.aausc.org). Another positive aspect is that over the last three decades an increasing number of large foreign language programs hired individuals with advanced training in applied linguistics and language pedagogy for the position of language program coordinators. The continued interest of the profession in program direction is also reflected in the increasing number of scholarly articles discussing issues related to teaching assistant supervision. A recurring theme is the need to prepare graduate student instructors to teach higher level language classes (Magnan, 1993) or literature courses (Pfeiffer, 2002). Other studies investigate the integration of technology in language instruction and graduate student training in this area (Waltje, 2002) or the preparation of graduate students for non-academic careers (Waltje, 2004).

Various scholarly contributions discuss the value of using technology in foreign language instruction. Furstenberg (1997), for example, points out that it is important not to view technology as a panacea but as a tool for language learning. Multimedia materials and interactive technologies are intrinsically appropriate for language learning, but we need to develop new pedagogical practices and strategies in order to exploit the best features of technology and further our curricular goals. Similarly, Blake (2001) advocates the judicious use of technology to enhance language learners' contact with the target language and culture. He exposes several prevailing myths about technology and promotes its use when it is consistent with best teaching practices and second language acquisition theories.

The training of graduate students and faculty to integrate technology into their teaching has also received attention in the scholarly literature. Goldfield (2001) draws attention to the difficulties that arise when departments try to hire individuals with both technological expertise and content knowledge in their area, while graduate students are not provided with this required technological training during their graduate studies. Rava and Rossbacher (1999) identify a related problem, namely, "pedagogical training often diminishes as students progress toward the degree" (p. 63). The authors try to remedy this situation at their institution by designing an advanced course for graduate student instructors that focuses on both pedagogical and technological issues, which they describe in their article.

The aforementioned articles indicate that already a decade ago, numerous scholars pointed out the insufficient technological training of graduate students. In today's classrooms, graduate student instructors without any such training would have difficulty to perform adequately, as they must use the technological tools already integrated in the curriculum. This might then reflect negatively on a department's overall ability to deliver good quality language instruction. While advocacy of using technology is ubiquitous in contemporary professional discussions, the question remains: What kind of technological training do graduate student instructors actually receive from their departments and programs?

Method

This study investigates the status quo of technology training for graduate student instructors to identify potential concerns raised by those faculty members who train them as well as make suggestions for improvement. It approaches the questions at hand from a different angle than the "Graduate Education in Technology" survey (Waltje, 2002). While Waltje contacted

deans, department chairs and finally the foreign language faculty to find out about graduate student education regarding technology training, for this study we sent a questionnaire (see Appendix) directly to coordinators of German language departments with MA or PhD programs. This group of people often provides technology training to graduate student instructors.

Questionnaires were sent to the coordinators or program directors of German language programs in eight German departments in Canada and 33 German departments in the US. The specific departments were selected based on the fact that they had graduate program, and in order to obtain a geographically representative sample that included public as well as private institutions. Four of the eight Canadian German departments (50%) and 25 of the 33 German departments in the US (76%) responded, resulting in an overall response rate of 71%.

The following research questions guided the study:

1. What kind of technology do graduate student instructors use in their daily classroom instruction?
2. What kind of training do graduate student instructors receive to implement these technological tools and where do they get the training?
3. How is a (potential) course combining technological and pedagogical training for graduate student instructors perceived in terms of teaching experience/effectiveness and in terms of marketability in academia?

Data Analysis and Results

In the following section, results of the questionnaire filled out by coordinators or directors of German language programs are presented. The questionnaire consists of 16 items (see Appendix), providing a mixture of multiple choice and open-ended questions. It covers five broad topics: departmental course offerings (Items 1-4), use of technology (Items 5, 11), training (Items 6-10), perceived usefulness of technological and pedagogical training (Items 12-15), and ideas for a new course (Item 16). Three items asked respondents to create open-ended lists about topics such as the kind of technology their graduate student instructors already use (Item 5) or would like to use more in the classroom (Item 11), and the kind of tools and topics coordinators would like to see covered if they were to design a course that combined technology training with pedagogical knowledge (Item 16). Some coordinators used the opportunity of the open-ended items to add narrative comments, providing rich qualitative data which will also be analyzed in the discussion section.

Items 12-15 asked coordinators to rate the usefulness of technological and pedagogical training for their instructors in terms of teaching effectiveness and marketability on a four-point Likert-type scale. In order to obtain quantifiable results, mean scores for these items were computed by assigning the score of four to the highest rating (“absolutely necessary”) and the score of one to the lowest rating (“not necessary at all”). The Likert scale was purposefully designed with four steps so as to eliminate the middle category (“neutral”, “not sure”) and to require respondents to make a choice.

The first four questions investigated whether departments offer a course specifically designed to combine technology training with the necessary pedagogical content knowledge in order to implement technological tools in the program. The introductory paragraph to the questionnaire clearly stated that this course was to be thought of as a separate course from the common teaching methods course most departments require of their new graduate student instructors. Table 1 summarizes the responses to these questions, providing a frequency count in raw numbers.

Table 1: Offering a course combining technological and pedagogical training

	Yes	No	N/A
Our department offers such a course	8	21	-
This course is a requirement for all graduate student instructors	5	24	-
The course is not required, but it counts toward fulfilling the degree requirements	11	7	11

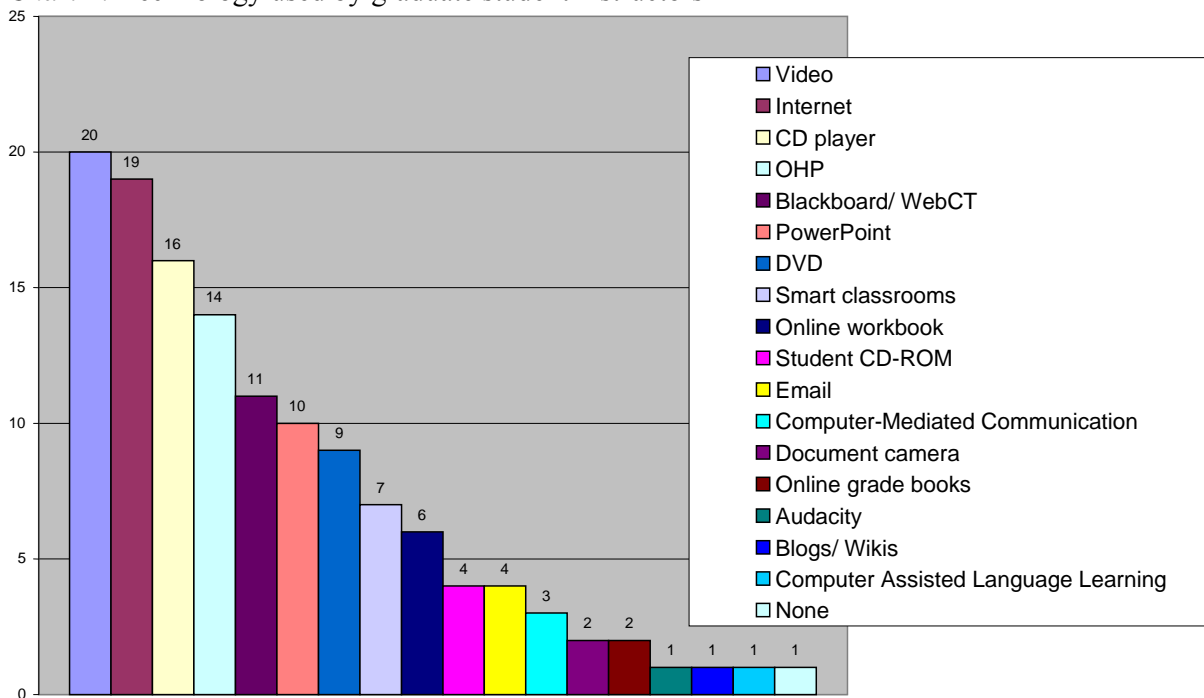
Respondents also indicated which other departments or units offered a comparable course open to German instructors as shown in Table 2.

Table 2: Course offerings by other units

	Number of times unit was mentioned
Education or Curriculum/Instruction	6
Language Center	6
French/Spanish	4
Interdisciplinary SLA Program	1

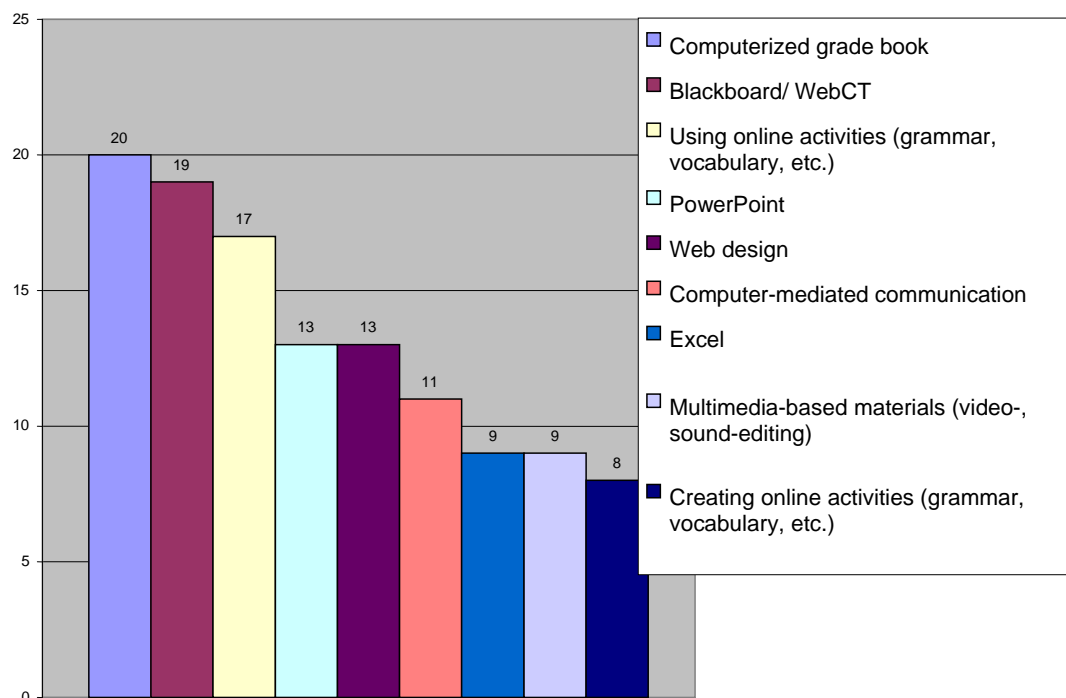
The next section on the questionnaire (Item 5) explored what kind of technology graduate student instructors use in their daily teaching. Chart 1 shows that graduate student instructors use a wide variety of technology, most of which is comprised of ancillary materials from a textbook (e.g., video, CD player, overhead projector [OHP], online workbook, student CD-ROM). Resources from the Internet are used very frequently, and there is also a fair amount of usage of course management tools such as WebCT or Blackboard and online grade books. The chart indicates that tools for computer-mediated communication such as chat, discussion boards, blogs, and wikis are used less frequently. Numbers in the chart provide a frequency count of how often these tools were mentioned in the responses.

Chart 1: Technology used by graduate student instructors



The questionnaire then inquired where graduate student instructors receive the training to use these tools (Items 6-10). The first item in this section (Item 6) asked whether graduate student instructors received any kind of technological training outside of the specific course that was mentioned at the beginning of the questionnaire. 25 coordinators (86%) reported their graduate student instructors receive technological training, and four coordinators (14%) reported their instructors do not receive any training. Chart 2 visualizes in which areas graduate student instructors receive training and shows that most of the training focuses on course management (using systems such as Blackboard or WebCT, keeping track of grades via computerized grade books or Excel). A good amount of training is given on using and/or creating online activities for all language skills and culture, which correlates with the fact that the Internet was mentioned as one of the areas most often used by graduate student instructors in their instruction. Some training deals with enhancing classroom delivery by using PowerPoint and designing web pages. Numbers in the chart provide a frequency count of how often these areas of training were mentioned in the responses.

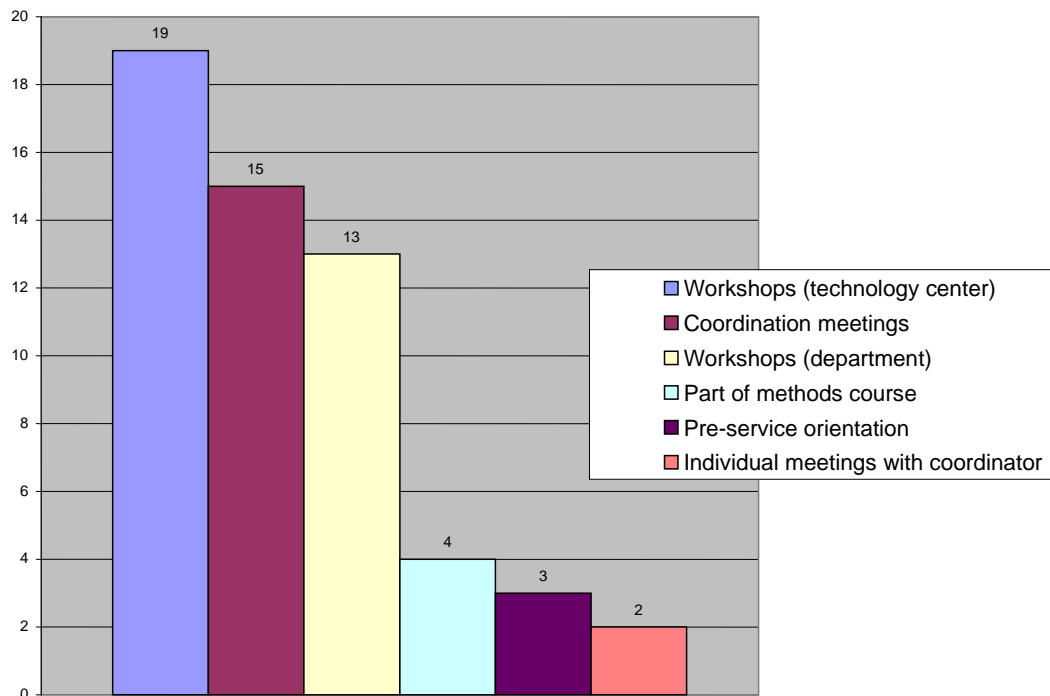
Chart 2: Areas of training



In general, the results show that graduate student instructors receive a lot of training in using a variety of technological tools. The question now is: where do they get this training, if they are working in departments not offering a specialized course? Chart 3 shows the training is done mostly through workshops offered by a technology center on campus, coordination meetings, and workshops offered through the department. To a smaller extent, training is also provided as part of the methods course, the pre-service orientation, and in individual meetings with the coordinator. The exact amount of this training, however, is unclear given that some of the training is done during the obligatory pre-service orientation or in the methods course. Required sessions or workshops focus mainly on course management systems, electronic grading tools, or the use of the online workbook. Numbers in the chart

provide a frequency count of how often these sources of training were mentioned in the responses.

Chart 3: Sources of training



The next section of the questionnaire (Items 12-15) dealt with the perception of a course that combines technological and pedagogical training for graduate student instructors. Regardless of whether their departments offered such a course or not, coordinators and program directors rated its usefulness in terms of their instructors' teaching experience and effectiveness and in terms of their marketability in academia. The first two questions (Items 12-13) asked for the coordinators' own opinions; the next two questions asked how they thought their graduate student instructors would perceive such a course. Obviously, responses to the latter two questions (Items 14-15) are only anecdotal. Since coordinators often work closely with graduate student instructors, however, they are likely to know about their graduate students' perception or might even have received explicit professional development demands on these issues.²

Table 3 shows the mean values for Items 12-15. On a four-point Likert scale, respondents checked their answers ranging from "absolutely necessary" (4 points), "useful" (3 points), "not useful" (2 points), to "not necessary at all" (1 point).

Results indicate coordinators value such a course immensely, as the mean value of their responses regarding their graduate student instructors' effectiveness is located between "useful" and "absolutely necessary" ($M=3.21$). The coordinators' rating concerning marketability is even higher ($M=3.34$).

² This study investigated the coordinators' opinions as the first part of a two-part research project. The second part intends to explore graduate student instructors' opinions directly.

Table 3: Perception of course

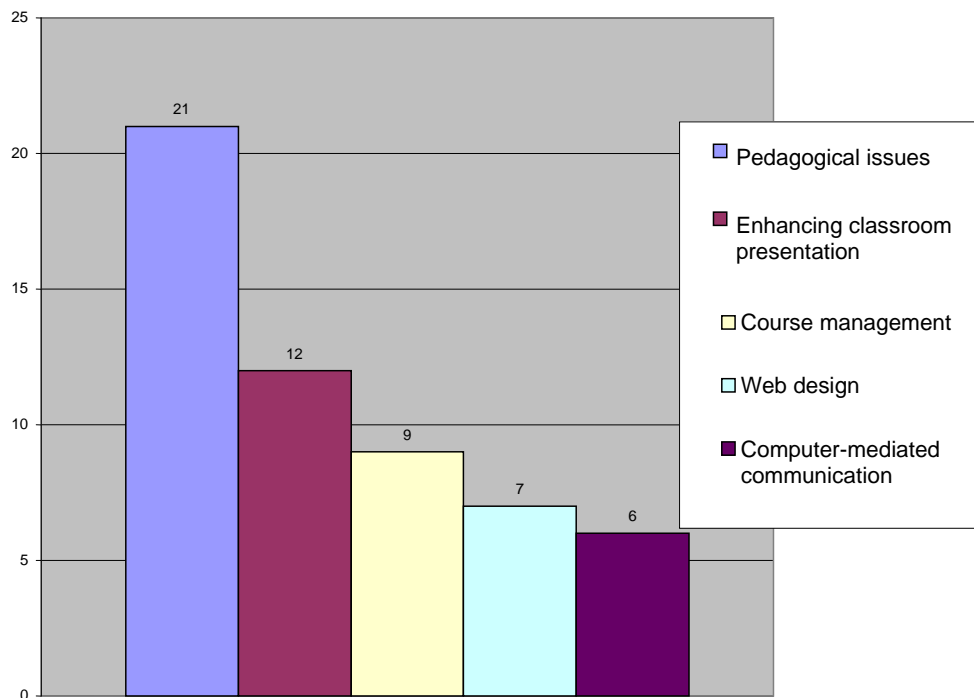
Question:	Mean
12. How do you perceive a course combining technological and pedagogical training in terms of improving your graduate student instructors' teaching experience and effectiveness ?	3.21
13. How do you perceive a course combining technological and pedagogical training in terms of your graduate student instructors' marketability in academia?	3.34
14. How do you think your graduate student instructors perceive a course combining technological and pedagogical training in terms of improving their teaching experience and effectiveness ?	3.00
15. How do you think your graduate student instructors perceive a course combining technological and pedagogical training in terms of their marketability in academia?	3.00

When asked how coordinators think their graduate student instructors would perceive such a course in terms of improving their teaching experience and effectiveness, the mean value is a little lower, correlating exactly to the answer “useful.” One respondent from a large public PhD-granting institution offered an explanation why graduate student instructors would consider such a course as not necessary, because they “are satisfied with the opportunities offered and nowadays different people have different degrees or prior knowledge. Current TAs are much more knowledgeable than TAs from 8-10 years ago.” This explanation exemplifies a crucial issue: Graduate students today are more technology-savvy than before, but do they also have the knowledge to utilize the technology in a pedagogically-sound manner? Another respondent from a private PhD-granting university commented that some graduate student instructors would find such a course useful, while others would not be interested in it. This coordinator also considered institutional specifics and stated: “We already have a required methods course, and if we tried to institute a second required course on technology, I think we’d have a rebellion on our hands.”

While almost all respondents believed their graduate student instructors would find such a course useful in terms of marketability, two coordinators, both from public PhD-granting universities, expressed some doubt. One stated that graduate students often perceived such a course as unnecessary, “until they go on the job market and read the job descriptions. No matter how often I tell them, it sinks in only at that point.” Another coordinator concurred: “I’m afraid not all of the teaching assistants are aware of the job market and what is marketable right from the beginning of their graduate career. We try to impart the importance of technological training but it can take a while, especially when it concerns cross-cultural training.”

When asked what kind of topics or tools coordinators would like to see covered in a course that would combine technological training with pedagogical knowledge for their graduate student instructors, coordinators offered numerous and extensive ideas. In order to visualize these suggestions, I have grouped them into five different areas in the following chart.

Chart 4: Suggested course topics



Starting at the lower end of the chart, the field of computer-mediated communication (CMC) was listed six times, specifically mentioning synchronous and asynchronous online discussions, WIMBA, as well as blogs and wikis. The area of web design was mentioned seven times in the coordinators' responses. The next larger category, in ascending order, comprises elements that support graduate student instructors in course management. The features mentioned in the responses were listed nine times and ranged from building course web sites and working with course management tools, such as Blackboard and WebCT, to using Excel and the Quia.com website. If used appropriately, these tools can save instructors time when sending announcements to their classes, posting materials for students' easy retrieval, grading homework online, and calculating grades.

The next group of suggestions which were arranged together into the category of enhancing classroom presentation consisted of digitizing and editing audio/video materials, learning how to use authoring tools (e.g., Flash, iMovie, Hot Potatoes), creating image databases, and using PowerPoint. Topics falling into this group were mentioned twelve times in the questionnaires.

The largest group of ideas dealt with pedagogical issues. A few of the twenty-one suggestions in this category referred to concrete examples, such as learning how to evaluate software or creating electronic portfolios. One respondent added a practical idea of helping instructors "to find out whether students 'copied' (i.e., cheated) texts from the internet" which is extremely useful at the intermediate and advanced levels of language classes when students engage in research projects and essay writing. However, most suggestions that fall into the currently discussed category indicate the pedagogical value and purpose of these tools carries a much stronger weight than in previous categories. Coordinators repeatedly emphasized the pedagogical aspect of the technology used by the graduate student instructors. The following quotations highlight the respondents' pedagogical goals to be considered when working with technology [emphasis of *pedagogical* in the list is mine]:

- “design *pedagogically sound* communicative web-based activities”
- “focus on the use of technology only where it is truly useful and not replicating what can be done with paper/pencil”
- “learn how the use of technology fits into theoretical/ *pedagogical* frameworks”
- “combine SLA theories, research, and classroom teaching”
- “make sure that a sound knowledge basis for FL *pedagogy* is created before (or as) discussions of technology enter the picture”
- “learn how to use technology/CALL for all aspects of teaching (reading, writing, culture, etc.) in a *pedagogically* effective manner”

The frequent use of the word “pedagogical” highlights the fact that coordinators are most concerned with the pedagogical issues behind the use of different technological tools or gadgets.

Discussion

The present study explored three research questions concerning the use of technology and the current state of technological training of German graduate student instructors, as well as coordinators’ ideas for a course combining pedagogical and technological training. This section revisits the research questions followed by a discussion of the results.

Research Question 1: What kind of technology do graduate student instructors use in their daily classroom instruction?

The responses summarized in Tables 1 and 2 give a first impression about the status quo of graduate student instructor preparation in German with regard to technology training. The large majority of departments (72%) does not offer a course combining pedagogical and technological training for its graduate student instructors. The only departments that offer such courses either have applied linguistics programs or faculty with training in second language acquisition. While only a small number of graduate programs require such a course, it is encouraging to see that eleven departments (38%) reported such a course as counting towards fulfilling the graduate students’ degree requirements.

Coordinators’ responses also indicate graduate student instructors use a wide range of technology in their teaching. The tools include ancillary textbook materials (Video, DVD, CD, overhead transparencies), the Internet, and course management systems. Although computer-mediated communication is mentioned less often, an increasing number of articles on chat, blogs, wikis, podcasts or virtual worlds in leading CALL journals (e.g., CALICO Journal, IALLT Journal, ReCALL) suggest the usage of these CMC-tools has been growing.

Research Question 2: What kind of training do graduate student instructors receive to implement these technological tools and where do they get the training?

A large majority of coordinators (86%) also reported their instructors receive technology training, mostly in the areas of course management (grade books, WebCT) and using the Internet for online activities. The sources of training (Chart 3) show clearly that coordinators or program directors are involved in every area of technology training except for the workshops made available through technology centers. Coordinators are thus responsible not only for the pedagogical development of their graduate student instructors, which falls into their domain, but also for their technological training. This adds a considerable amount of work to the already extensive responsibilities of coordinators, and also requires them to have both a sound knowledge of technology and an ability to connect it to their pedagogical expertise for the sake of teaching it to others.

Research Question 3: How is a (potential) course combining technological and pedagogical training for graduate student instructors perceived in terms of teaching experience/effectiveness and in terms of marketability in academia?

As Table 3 shows, coordinators considered such a course either absolutely necessary or useful, both in terms of graduate instructors' effectiveness as well as their marketability. Their perception is reflected in the examples of job announcements at the beginning of this article. Coordinators seem to be aware that knowledge in technology is valued highly on the job market. However, they also raised concerns about the course load of graduate students which needs to be taken into account before additional course requirements could be made.

Coordinators' responses to how their graduate students would perceive such a course were less strong. Some respondents explained this with the greater knowledge of technological tools that their instructors already possess, while other coordinators indicated their graduate students are not aware of the job market situation and its demand for expertise in technology. One coordinator also raised the issue of cultural differences that might affect the graduate instructors' training: unfamiliarity with the demands of the North-American job market or a different belief system regarding language learning and teaching might lead some international students to underestimate the importance of training and use of technological tools in the classroom.

Responses to the questions inquiring about the value of a course in technology and pedagogy indicate coordinators view it as an immensely important element in their graduate student instructors' professional development, regardless of whether or not a department offers it. In order to impress the usefulness of such a course on graduate students, coordinators need to increase their effort in explaining the benefits and marketability of such professional development. This task could be facilitated to a great extent if departments and graduate programs supported their coordinators by giving them the opportunity to offer such a course. The combined technological and pedagogical training should not be in addition to the regular coordination work, however, but rather a course requirement of the degree program and part of the coordinators' teaching allotment.

Following the consideration of such a course's usefulness, the questionnaire elicited ideas about topics coordinators would like to see covered in a course on pedagogy and technology. Although CMC-tools are already used in a number of programs, as we have seen in Chart 2, coordinators think it would be advantageous for graduate student instructors to delve further into this area and familiarize themselves not only with the use of these tools, but also with the research that has been conducted on this subject showing the benefits of CMC for language learners (Blake, 2000; Chun, 1994; Darhower, 2002; Kern, 1995; Warschauer, 1996). Coordinators proposing this topic to be included in the suggested course emphasized combining knowledge of how to use the technological tools with knowledge of the underlying pedagogical principles.

Other subject areas coordinators proposed can be grouped into the categories of web design, course management, and enhancing classroom presentation. These topics deal mostly with learning how to use specific devices and programs or using them more efficiently in teaching and course management. The suggestions in these categories all constitute rather practical tools some of which are not even restricted to language learning (e.g., creating web pages, keeping an electronic grade book, designing PowerPoint presentations).

Most ideas, however, can be categorized under "pedagogical issues". Coordinators repeatedly underlined the pedagogical purpose of the tools and programs used in language instruction. They understand that technological training cannot be separated from pedagogical training, which is where they see the problem: Graduate student instructors today are probably more technologically savvy than previous generations, but they likely do not have more pedagogical knowledge to integrate technological applications with sound pedagogical practices than previous generations. Delegating the technological training to a technology center does not bridge the gap as these centers are designed to focus primarily on teaching the use of specific tools and programs, but do not necessarily accommodate the

pedagogical element of teaching languages. For example, coordinators have likely encountered an excited graduate student instructor who just learned a new tool, for example how to make PowerPoint presentations with images and animations. With enthusiasm, this teaching assistant might now use PowerPoint presentations to a great extent in class, captivated by its ease of use and its adaptability to a variety of situations. While the teaching would now be enhanced by multimedia, providing students with colorful and perhaps even entertaining slides, there is the risk of turning a supposedly interactive language class into a more teacher-centered, lecture-style class, which is not the goal of most progressive foreign language programs. This situation is an example of how using technology in the classroom can be less successful when it is not grounded in pedagogically sound practices.

Conclusion

The results of the questionnaires show that graduate student instructors in German language programs use a variety of technological tools in their teaching. They also receive a good amount of training, mostly provided by language program coordinators and technology centers on campus. Their training focuses largely on course management tools such as computerized grading programs or WebCT and on using the Internet for teaching or to enhance classroom delivery. In the opinion of the coordinators who responded to this survey, many graduate student instructors seem to be familiar with all kinds of technological gadgets and are technologically well-informed.

These positive aspects are juxtaposed to the coordinators' concern about the integral gap between technological and pedagogical knowledge. When asked what was especially important for graduate student instructors to know and what could be offered in a course, coordinators emphasized the pedagogical content knowledge that graduate instructors need and the ability to integrate technological tools appropriately into theoretical frameworks of second language education.

While the overwhelming majority of coordinators agreed a course combining technological and pedagogical training is either absolutely necessary or useful, unfortunately, the majority of departments do not offer such a course. Only departments with applied linguistic programs or faculty with training or background in second language acquisition offer them. The coordinators' responses also indicate technological training should not be delegated to a source outside a department, such as a technology center, because it needs to be conducted in conjunction with pedagogical training, particularly as it relates to language teaching.

Furthermore, a perceived need for more technological and pedagogical development of graduate students exists (as evidenced in this survey and in Waltje's 2002 study), but the reality is most departments do not offer such training. It would be beneficial if German departments supported their graduate students by either offering such a course themselves, collaborating with other language areas to offer the course jointly or accepting a similar course from a different faculty or even neighboring institution as counting toward fulfilling degree requirements. The language program coordinators who are likely already charged with offering increased technological and pedagogical training should also receive support. They could, for example, benefit from additional resources in the form of research assistants from technology-related fields to assist in the envisioned course. Providing such a course as part of the coordinators' regular teaching allotment rather than having to offer non-credit seminars or workshops in addition to the teaching load would also be helpful. Another possibility is to provide coordinators with release time to allow them to hone their own technological skills so that they are able to share their knowledge with their graduate instructors. I hope the results of this preliminary study will contribute to the discussion regarding the professional

development of graduate student instructors and their preparation for future careers as professors or for jobs outside of academia.

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Appendix

Survey: Technological Training of German Teaching Assistants

Dear Colleague,

I'm interested in finding out what kind of technological training your Teaching Assistants need and receive. The course mentioned in this questionnaire is supposed to focus on technological training (combined with pedagogical background knowledge to implement and use the technological tools), and is a separate course from the common "methods" course which most departments require of new TAs. It is also not intended to replace the "methods" course.

Please take a few minutes to complete the following questionnaire. Circle or check the answer to each question or statement that best reflects your personal experience or preference. Your participation is sincerely appreciated!

Name of University:

Name of Department:

Programs offered: M.A. Ph.D.

Your position: Coordinator/Director of the Language Program
 Grad Advisor
 Other:

1. Does your department offer a course which provides your Teaching Assistants with technological training (and the necessary pedagogical background knowledge to implement these technological tools)?

yes no

2. Does another department offer such a course?

yes, department name: no

3. Is this course (either in your own department or another one) a requirement for all TAs?

yes no

4. If the course is not required, does it still count towards fulfilling your graduate students' degree requirements?

yes no

5. What kind of technology do your TAs use in their daily classroom teaching? (please list)

6. Do your TAs receive any kind of technological training (other than that referred to in #1 and #2)?

yes no (please continue with question #10)

7. If yes, in which areas do they receive training (please check all applicable):

- Power Point
- Excel
- WebCT, Blackboard, or similar course management systems:
- computer-mediated communication (chat, bulletin boards, Wimba, etc.)
- any kind of computerized grade book
- web design
- creating online activities (grammar, vocabulary, reading comprehension, listening comprehension, cultural activities)
- using online activities that are available on the web (grammar, vocabulary, reading comprehension, listening comprehension, cultural activities)
- multi-media based materials (incl. video-, image-, and sound-editing)
- other:

8. Where do your TAs get this training?

- in coordination meetings
- in workshops offered by the department
- in workshops offered by a technology center (etc.) on campus
- in video conferences
- other:

9. Do you require your TAs to attend any of these training sessions?

- yes no
- If so, how many? (please indicate number)
- If so, which sessions? (please indicate session themes)

10. If your TAs do not receive any training: do you think they would like to use more technology if they had the training and the necessary equipment (e.g., smart classrooms, computer labs)?

- yes no

11. What would they like to use more often? (please list)

12. How do you perceive a course combining technological and pedagogical training in terms of improving your TAs' teaching experience and effectiveness?

- absolutely necessary
- useful
- not useful
- not necessary at all

13. How do you perceive a course combining technological and pedagogical training in terms of your TAs' marketability in academia?

- absolutely necessary
- useful
- not useful
- not necessary at all

14. How do you think your TAs perceive a course combining technological and pedagogical training in terms of improving their teaching experience and effectiveness?

- absolutely necessary
- useful
- not useful
- not necessary at all

15. How do you think your TAs perceive a course combining technological and pedagogical training in terms of their marketability in academia?

- absolutely necessary
- useful
- not useful
- not necessary at all

16. If there was an opportunity to design a course that combined technological training with pedagogical knowledge, what kind of topics/tools would you like to see covered in this course?

If your department already offers a course on technological training, would you be willing to share the syllabus with me (and send it to me by email attachment)?

Thank you very much for your participation!!!