Technoconstructivism for the Undergraduate Foreign Language Classroom

Edwina Spodark
Hollins University

Abstract: *Although we have entered into the 21st century, most institutions of higher learning have not yet realized a routine integration of technology into regular classroom pedagogical practices. This article highlights two of the main concerns of university-level foreign language faculty with respect to incorporating technology into everyday classroom teaching and provides suggestions for facilitating the integration of technology into the undergraduate foreign language classroom as an integral part of the curriculum where the main focus is creating an educational environment that is conducive to student learning. A technoconstructivist approach, a blending of the pedagogical practices advocated by social constructivism with the benefits of educational technology, is recommended and demonstrated. By providing examples of effective classroom uses of technology that respect the five attributes of meaningful learning that are the hallmarks of technoconstructivist pedagogy, this article furnishes a blueprint for faculty to follow that will ensure a successful integration of technology, from the use of the scanner to incorporating material from Web sites designed by top education professionals into daily lessons in the foreign language classroom.*

Key words: *classroom technology integration, educational technology, Millennials, social construction of knowledge, technoconstructivism*

Language: *French*

Introduction

Although university-level classrooms are now becoming increasingly populated by the "Millennials" (i.e., students who have used computers in their classrooms throughout their entire educational experience), the majority of institutions of higher learning have not yet adopted technological applications into their routine classroom pedagogical practices. As Larry Cuban discovered at the K–12 level: "Out of every 10 teachers in this country, fewer than two are serious users of computers and other information technologies in their classrooms (several times a week); three to four are occasional users (about once a month); and the rest—four to five teachers out of every 10—never use the machines at all . . . Of those same 10 American teachers, about seven have computers at home and use them to prepare lessons, communicate with colleagues and friends, search the Internet, and conduct personal business. In short, more teachers use computers at home more than at school" (1999, p. 68). This startling pattern replicates itself at the university level as well. "In universities where professors have had almost two decades' experience of using personal computers at home and at the office, where there is much professional help to get them to use computers in their classrooms, the same pattern of limited and unimaginative instructional use of computers turns up" (Cuban, 1998, p. 6). Cuban cited a survey done at Stanford University that clearly illustrates this parallel: "The survey went out to 750 professors who taught undergraduates. Fifty-nine percent of the professors said that they never used a computer in the classroom; 19% said they used the machines occasionally; 8% said they used computers often . . ." (1998, p. 6).

Edwina Spodark (PhD, Northwestern University) is Associate Professor of French at Hollins University, Roanoke, Virginia.

In almost every institution of higher education there are, of course, entrepreneurial faculty members—educators who adopt technological applications well in advance of others—who recognize the advantages of pedagogical uses of technology and who have taken the needed steps in order to bring these benefits to the students in their classrooms. However, the number of faculty actively integrating technology into their classroom teaching practices remains relatively small. Sax's study of overall faculty attitudes toward technology completed in 2000, where 87% of all faculty surveyed communicated via e-mail at least twice a week and 85% regularly used computers to write memos or letters but only 22% used computers in undergraduate course instruction, supports the conclusion that, although faculty members use computers for a myriad of professional purposes, integration of technology directly into classroom teaching practices does not constitute a high priority item at the university level.

University-level professors are not putting technology to use in their classrooms in large numbers for many reasons. The above statistics clearly demonstrate, however, that a fear of the technology itself may not be the main cause of faculty reluctance to integrating technology. As Spodark noted in her 2003 article "Five Obstacles to Technology Integration at a Small Liberal Arts University," a lack of institutional vision, senior leadership, a critical mass of equipment, and appropriate incentives may all play a part in contributing to low faculty participation in incorporating technology into their pedagogical practices in the classroom. In *Interactive Learning: Vignettes from America's Most Wired Campuses*, Brown (2000) also cited the punishing time demands of the profession, the need for extensive support, and the frustrating delays caused by system incompatibilities as further faculty concerns when integrating technology into their courses. Yet the main resistance to classroom integration of technology on the part of practicing classroom teachers in higher education seems to stem primarily from two sources: a concern for a possible loss of social interaction in the classroom and a lack of time to develop technology-enhanced lessons.

The first explanation for why an explosion of in-class technology use is not evident at institutions of higher education resides in the conflict of what Cuban called "core values" with respect to classroom teaching: "The essence of teaching is a knowledgeable, caring adult building a relationship with one or more students to help them learn . . . It is an intertwining of emotional and intellectual bonds that gives a tone and texture to teaching and learning that is unlike what occurs in the workplace" (1998, p. 7). Newson described it this way: "The point hardly needs making that teaching and learning are social processes. Studies of education show that these processes are influenced not only by the formal curriculum but also by the implicit social and cultural values that are embedded in,

and excluded from, it" (1999, p. 53). Professors do not want to lose the social interaction with students that may have drawn them into teaching in the first place. They see technology as imposing distance in the student–teacher relationship. They are concerned that the technology will isolate them from their students and both teaching and learning will suffer.

However, technology need not sever the ties to the social integration of knowledge prized by many university professors. The classroom practice of *technoconstructivism* —a blending of the pedagogical practices advocated by social constructivism with the benefits of educational technology whenever possible—can satisfy both the impetus for a practical application of the tools of technology and the desire to preserve classroom social interaction. "Constructivists believe that knowledge is constructed, not transmitted . . . Teaching is a process of helping learners to construct their own meaning from the experiences they have by providing those experiences and guiding the meaning-making process" (Jonassen, Peck, & Wilson, 1999, p. 3). In order to get university-level faculty to use it on a regular basis, technology in the classroom must be incorporated to serve this interactive social process. "If we accept that our goal, as technology-using educators, is to support meaningful learning, then we should use technologies to engage students in active, constructive, intentional, authentic, and cooperative learning" (Jonassen, Peck, & Wilson, 1999, p. 7). In order to accomplish this, we must accept a fundamental shift from teaching with technology to learning with technology. As Noon envisioned it: "the computers have now faded into the background and become an ordinary part of the collaborative learning process" (1999, p. 11). With this approach in mind, university professors can accept pedagogical technology as assisting in the social integration of knowledge in the learning environment and not as an impediment to it.

Technoconstructivism is ideally suited to promote sound effective teaching and learning in the university-level foreign language classroom. With its emphasis on meaningful learning that is active, constructive, intentional, authentic, and cooperative, technoconstructivist pedagogy allows the instructor to integrate the various tools of technology into classroom practices in order to provide foreign language students with a stimulating, interactive, and productive learning environment. However, as with all introductions to pedagogical technology, university-level faculty must begin at a point where they feel most comfortable and expand their classroom use over time. The Sax (2000) report on faculty attitudes indicated that "two-thirds of college and university faculty (67 percent) report that 'keeping up with information technology' has proved to be stressful for them . . . Information technology is the fourth most frequently cited source of stress among women (74 percent) and the fifth most frequently cited among

men (64 percent), ranking for both groups above other sources of stress such as research and publishing demands (50 percent), teaching load (62 percent), and the review and promotion process (46 percent)." With faculty stress levels in mind, this analysis of the application of techno-constructivist methods in the foreign language classroom will begin with the creative use of the relatively easy-to-use scanner as the first technological tool that teachers employ with their students. From that simple device, the study will proceed to technological applications with increasing levels of complexity that can enhance the teaching and learning of foreign languages at multiple levels of undergraduate university instruction.

In an elementary undergraduate French language course at the university level, for example, one of the main goals of instruction is an introduction to French culture. Beyer and Van Ells offered many excellent Web-based approaches for teaching culture in the French classroom in their 2002 article "Using the World Wide Web to Teach Francophone Culture" and Walz (1998) provided a variety of lessons for the Web that support the *Standards for Foreign Language Learning in the 21st Century* (National Standards, 1999). However, faculty who lack experience in or are intimidated by using the Web in the classroom may want to start with something more manageable and under their control. The National Core French Study of Canada, which focuses on the teaching of culture in second language (L2) programs, states that at the beginning level of cultural instruction "the emphasis is on encouraging students to discover the French reality in their own local environment before learning about francophone culture from areas further afield" (Flewelling, 1994, p. 134). The scanner can be put to effective use in the classroom in order to achieve this directive.

As a possible example of a first-week activity in a university-level elementary French course, individuals in the class are directed to go out into their personal environments and intentionally and actively locate items of French origin and collect them. The objects may range from labels and advertisements from French products to the actual French products themselves, from cheese and makeup to DVDs and wine labels. Following this collection phase, in a scanner-equipped multimedia classroom, students are paired together to construct a collage of the authentic French objects that they have discovered. Once the students have cooperatively decided which items will be included in their small group collage, each pair of individuals takes a quick turn arranging and scanning their finds into a color image file saved on the desktop of the computer attached to the scanner, as well as onto a labeled diskette for each two-person team.

Each team then presents the digital image of its collage via projection on a main screen to the class, telling the group where they found the items displayed and explaining their reasons for selecting the objects that they have included in their collage. In this way, each student's individual connections to and discoveries about French culture contribute to the collective knowledge base of each pair of students as well as to the entire group. After the presentations, the instructor asks the students in the class to categorize the various objects that they have seen in the collages. The usual categories include such groups as food, beauty items, entertainment/news, health products, and clothing. Through a subsequent teacher-led discussion of the categories of objects the class has found, students as a group become aware of the beliefs and stereotypes they hold about France and the French based on the items in their proximal environment. Continuing the whole-class study of the categories of French objects found, discussion then centers on the reasons for the stereotypical assumptions students may have about the French and how they are influenced by the types of French products with which they are likely to come in contact. Any unusual items discovered serve as a counterpoint to the typical objects collected and can be analyzed by the class to help students see beyond their accepted views of France and its people to understand that there may be more to French culture than they originally thought.

This interactive lesson uses a relatively unsophisticated piece of technology—the scanner—to allow students to create authentic, digital, and archivable artifacts that serve as the basis for an active cooperative group discussion that intentionally draws students toward a deeper understanding of the target culture. The technology also fosters a more inclusive learning environment by appealing to each of the three main learning styles of students. Haptic or tactile/kinesthetic students (who learn the most from a hands-on approach) benefit from the construction of the collages, the visual students benefit from the visual representations of the collages presented to the group, and the auditory students profit from the discussion phases. In this lesson, the emphasis is not on the university-level use of technology itself but rather on the social construction of knowledge about French culture. It is this emphasis on social interaction and the experience of a cooperative construction of knowledge that will interest a larger number of university-level faculty members. By preserving this socially interactive learning element in the classroom, the possibility that professors will incorporate technology in this way is increased.

At the intermediate level of French instruction, two of the main goals of a university-level course for undergraduates are a thorough grammar review and the demonstration by students of their ability to create and express themselves using the target language. A practical use of technology within a technoconstructivist framework promotes both of these goals. In this example, the use of a scanner is combined with simple PowerPoint slides and an image cap-

tured from the World Wide Web in order to inform a lesson on French grammar where all classroom interaction takes place in the target language. One of the more thorny grammatical points that students encounter in an intermediate-level French course is the use of the subjunctive after verbs that demonstrate the imposition of one person's will or desires upon another, often called *"expressions de volonté."* However, by taking a technoconstructivist approach to this problem, students easily master this essential grammatical concept. "Constructivists believe . . . people make sense out of whatever they experience by constructing their own meaning based on what they already know, and how they perceive the new information" (McDonough, 2001, p. 77). With this qualification in mind, a technique must be discovered that will activate a connection common to the experiences of all the students. In this particular case, this set of verbs is renamed in the classroom as the "Mom" verbs. Students are given numerous examples so that they come to see all the verbs of this kind as things their mothers would want, prefer, desire, demand, wish, or insist they do. This universal cognitive connection activates students' shared background knowledge and allows them to begin to construct mental bridges to this grammatical concept. The use of technology helps solidify this connection.

Using simple PowerPoint slides, the class is introduced to the grammatical concept and provided with a list of examples of these types of *expressions de volonté* that require the use of the subjunctive. Examples such as the following refer to things mothers would have them do: "Mom wants you to make your bed," "Mom insists you do your homework," "Mom prefers you not wear that outfit," and so on. Once students have absorbed the pattern, the next set of PowerPoint slides uses pictures of a mother asking her daughter and then her son to do some household chores. These pictures come directly from the student textbook for the course and are scanned to create digital images and inserted into PowerPoint slides. It must be noted that scanning only a small number of images from the adopted textbook is recommended in order to remain in accord with the educational application of the fair use copyright provision. The familiarity and tailor-made applicability of these pictures make them the perfect choice for this technological approach. Under these scanned pictures, there are added introductory phrases that mirror the activity in the images using the "Mom" verbs that had been previously introduced: *"La mère préfère que sa fille . . . ," "La mère veut que sa fille . . . ,"* and *"La mère exige que son fils . . ."* Students are asked to complete the sentences using the subjunctive and vocabulary about household chores they have previously studied. They are then encouraged to tell the class what their own mothers want, insist, or prefer they do. This allows the students to demonstrate they have assimilated the idea of the "Mom" verbs. "Constructivism focuses on what the students do, not what the teacher does. The learning process begins with the students' prior knowledge and ends with their demonstrations" (Vermette, Foote, Bird, Mesibov, Harris-Ewing, & Battaglia, 2001, p. 89).

Once the students have demonstrated that they can creatively use the language they have learned to complete the sentences from the slides and to extend that ability to their own experiences, the next objective is to have students demonstrate that they can express their own meanings using the grammatical concept. In order to prompt students to devise sentences of their own and to go beyond the "Mom" of the *expressions de volonté* and demonstrate that they have the concept under their control, the instructor uses a PowerPoint slide of a picture of Brad Pitt and/or Jennifer Aniston. By simply searching for "pictures of Brad Pitt/Jennifer Aniston" using the Yahoo! search engine, images of the popular screen stars can be quickly found, captured from the Web and inserted into a blank PowerPoint slide for display in the classroom. The sources for these pictures should be duly noted on the slides. In addition, changing the selection and the pictures of the movie stars for this lesson every year will ensure the activity is kept interesting and up-to-date for the students as well as ensure the fair use policy for educational settings is not violated. The students are then asked to use their imaginations to answer the question: "What do you want Brad Pitt/Jennifer Aniston to do for you?" This almost inevitably leads to a game of "Can you top this?" with respect to amusing or risqué responses as students listen intently to what their classmates say and try to outdo one another.

Finally, students are put into teams and asked to work together cooperatively to write three sentences, incorporating the use of the *expressions de volonté* and the subjunctive, where they direct the professor to do something they all want. The team then selects one of its requests and a team member writes the sentence on the board. The instructor reviews all the group contributions, pointing out the grammatical structures that they contain as a summary activity. As a motivational incentive, the teacher has also agreed beforehand to carry out any reasonable directives as long as the group demonstrates they have mastered the concept under study. In one instance of this activity, students got out of class early, were spared the written homework exercise, and had cookies in the next class as the instructor granted practical requests that were in correct grammatical form.

This second example of a technoconstructivist approach to teaching foreign language grammar highlights the type of social interaction that is prized by university-level faculty. The technology used here not only fosters classroom interaction that is active and intentional but does so without excessively intruding into a more traditional classroom social dynamic. "The computers have . . . faded into the background and become an ordinary part of

the collaborative learning process" (Noon, 1999, p. 11). With a readily accessible cognitive connection to the material and technology-inspired activities that appeal to the three major learning styles, both students and teacher participate openly and fully in the successive phases of the lesson. Visually oriented students respond quickly to the images used in the "Mom" verbs section while students whose preferences are auditory in nature profit from listening to the creations of their classmates in the Brad Pitt/Jennifer Aniston portion of the class. Haptic learners, who learn best by doing, benefit from the team composition activity. The final cooperative team-based assignment also allows all the students to demonstrate their mastery of the grammatical concept by constructing authentic requests for the professor to carry out. It is this type of technology integration that can be easily incorporated on a routine basis at the undergraduate level of instruction while maintaining the commitment to socially constructed knowledge that is at the heart of teaching for a large number of university-level faculty.

In addition to a perceived threat to their core values as teachers, incorporating technology into their classrooms on a regular basis also presents a time constraint for a majority of professors. As Cuban's Stanford faculty study reported: "Two out of three of the professors responding to this survey said that the lack of time to develop relevant software for their course was a strong factor in their non-use; 45% said that they had no time to learn about classroom uses of computers. Yet help from consultants was available in five university centers. Between 70% and 90% of the faculty responded that they had not used any of these five centers" (1998, p. 6). As these statistics indicate, faculty worry that it will take them enormous amounts of time to prepare classes where technology is involved. They believe that they must singlehandedly develop complicated technology lessons and software for their courses while the other demands of their profession simply do not leave them time to undertake this process. As a result, the majority of them take no action at all.

As the two previous technoconstructivist examples have shown, however, an effective path to technology integration in the classroom proposes that faculty members start with something simple, like a scanner, and progress to more complex applications, such as PowerPoint slides and Web pages, as they become more comfortable and proficient with the various technologies. In this way, faculty time investment can be kept to a minimum while they learn one new technology at a time, successfully implement it in their classrooms, and then, as their schedules permit, advance to higher levels of technological complexity with the express purpose of classroom integration. However, another path that also takes into account the limited time that faculty have available to integrate technology into undergraduate education resides in an efficient and tailored use of pedagogical materials already available on the World Wide Web (WWW). This approach greatly reduces the technological learning curve for faculty and allows them to integrate technology into their classes almost immediately.

The Web represents an almost endless source of authentic material to use in teaching foreign languages. As Abrate reminds us: "The multitude of WWW resources allows teachers more flexibility in exploring a given topic that arouses students' curiosity and permits collaborative, communicative classwork where the students use the target language to complete their work" (1997, p. 162). Although this in itself may seem overwhelming, it also means there is no need for every professor to spend time developing material from the ground up. Creatively using the technological resources available on the Web removes a great deal of the burden of finding enough time to create pedagogical applications for the classroom. There are several sources of potential technology-enhanced lessons and raw material for activities that foreign language teachers can use to their advantage. Perhaps the most accessible source of material is the foreign language textbook publisher's Web site. Virtually every foreign language textbook publisher today provides companion student Web sites for the classroom texts they market. These Web sites are developed by experienced classroom teachers and they are often open and available to anyone. They normally provide machine-graded grammar and culture exercises as well as a series of Internet activities tied to topics common to most foreign language courses. Although, some text Web sites allow selected student activities to be printed out for distribution in class such as the "Internet Exercises" at the companion Web sites for the introductory French text *Horizons* by Manley, Smith, McMinn, and Prévost (2002) (http://www.heinle.com), the majority require a password for students to receive feedback on the computer-graded grammar and culture exercises and therefore the text in question must be adopted for the class in order to use the machine grading and e-mail features of the exercises. Thus, the specific text may need to be in use in the classroom for faculty to use these resources exactly as they appear on the site. However, these companion sites provide a wealth of inspiration and suggestions for teachers to construct similar activities for their own students. In addition, instructors may find textbook publishers' sites the most useful for easily and quickly locating collections of Web-related materials on a particular topic that can be adapted to a specific purpose in their own classes. For example, the list of seven related sites on music that allows students to listen to different kinds of French music on the Web found at the Heinle/Thompson companion Web sites (http://www.heinle.com) for the French textbook *Je veux bien!* (Bragger & Rice, 2002) can prove to be an invaluable technology time saver for professors who want to develop their own lesson on this subject.

The Web also provides fee-based alternatives for teachers who wish to create their own language lessons and activities that their students can access online. One excellent example is the *Quia* (1998) Web sites (http://www.quia.com). "It pioneered the 'create-your-own' concept, giving instructors the ability to create customized educational software online, built around their own course materials and made available to students over the Web" (http://www.quia.com/company/quia_web.html). For a small annual fee, teachers can easily create quizzes, Web pages, games, surveys, and much more that is tailor made for the students in their classes. This option affords language teachers who wish to make the investment a unique opportunity to develop personalized course material that will integrate well into any of their classes.

Another timesaving way to locate free lesson resources on the Web that integrate technology into the classroom is to access the sites of colleges and universities that have foreign language teaching assistant and/or teacher training programs. These compilations of ready-made lesson and activity plans are developed by education experts in their various fields and offer a ready source of inspiration or imitation. For instance, the *French Language Learning and Teaching Resources* Web page by Cheryl Krueger (1998) at the University of Virginia (http://minerva.acc.virginia.edu/~french/resource/) not only provides lesson and activity ideas for graduate teaching assistants and others, but also authentic digital images keyed to grammatical concepts that can be projected directly from the Web site and used in teaching multiple levels of French language. These resources can be simply and quickly adopted or adapted for classroom use.

Yet another source of material that can be adapted for use in a technology-enhanced foreign language classroom can be found in online teaching modules developed by noted and well-established pedagogical experts who openly invite professors and students at other institutions to make use of their site contents. One such invaluable resource for teaching both French language and culture can be found at the *Civilisation Française* site created by Marie Ponterio (2004) of SUNY Cortland (http://www.cortland.edu/www/flteach/civ/Index.html). This site offers activities and images on a wide variety of cultural topics that are found in teaching all levels of French, from "*la Vie Familial*" to "*L'Economie*" to "*Les Ecoles*." Each category includes numerous full-color, authentic French images, interactive quizzes (many with audio answer verification), and streaming video clips. Although geared towards individual student use, this Web site is rich with possibilities for a technoconstructivist classroom as well. In order to adapt the material provided, however, professors must pick and choose judiciously only those elements that accomplish the pedagogical goals of their own classes. The use of the "*La Cuisine*" section from the *Civilisation Française*

Web site as it may be used in a fifth-semester conversation course will serve as an example of a technoconstructivist adaptation and application of this exceptionally high-quality, ready-made online pedagogical material.

One of the main objectives of an undergraduate, fifth-semester conversation course is to provide students with opportunities to expand their fluency in the target language while developing an understanding of the unique attributes of the target culture. In order to achieve this goal, students must engage in activities that mirror real world uses of the language under study. The online resources available at the *Civilisation Française* Web site are ideally suited to this purpose. Sharing meals and/or being invited to dinner with a French family is a common occurrence when undergraduate students study abroad and this makes the topic an appropriate one for exploitation in a multimedia-equipped classroom if one is available. To begin the technology-enhanced lesson and act as a warm-up activity, the instructor makes use of several of the images in the "La Cuisine" section of Ponterio's Web site. The instructor begins by projecting for the class three pictures that appear near the end of the Web page. These pictures show a table set for a French breakfast, lunch, and dinner. By asking students to compare the authentic French table settings to their American counterparts and to attempt to explain the differences, the professor prompts students to activate vocabulary and background knowledge they will need to discuss the topic under study in more detail later on. The instructor then returns to the very first picture on the Web page, "A table." This picture functions as an authentic example of French people sharing a meal. By asking students to compare it to a typical American meal, the professor leads students to begin to discover attributes that differentiate the French dinnertime practices from the American. The same process is repeated using yet another picture depicting two men sharing a fondue at a dinner party from further down on the Web page. How is this image from a French dinner party similar to or different from an American one and why? As students volunteer their ideas to the class, the group begins to form collective conclusions about French cultural practices with respect to sharing meals.

Once students are actively engaged with the material under study through the warm-up phase, the class moves on to a cooperative activity that makes use of an interactive, true–false quiz found on the *Civilisation Française* Web site about French table manners, French gastronomic practices, and how to behave at a dinner party in a French home. The interactive quiz in the "*La Cuisine*" category is a lengthy 31 questions. Therefore, students are divided into groups of three and each team is assigned a certain number of the questions to review. Each group is directed to proceed through its set of questions at one computer terminal, discussing the appropriate answers together, choosing a

response for each question and verifying the answer by clicking on the question mark that reveals the answer along with a short explanation of the situation as needed. As a synopsis of their work, the students in each group are directed to write a collective summary of the information that their section of questions contains as if they were intentionally composing entries for a manual on good table manners in France. Each group saves their summary to disk and turns it in to the instructor. The professor then compiles all of the results in sequential order and, as each section of questions is displayed for all to see, asks each group to present and explain their entries to the rest of their classmates. In this way, the written work compiled by each small group adds to the overall knowledge base of the entire class and students are afforded an opportunity to discuss any concepts that are still unclear to them or to comment further on the differences between French and American practices.

Finally, the professor either distributes on disk or via e-mail, or posts to the class Blackboard site, a copy of the complete version of the student-constructed manual on French table manners to each one of the students. They will need to use the digital manual they have constructed as a reference as they move into the final phase of this technology-enhanced lesson. The concluding task for the lesson actively engages the students in demonstrating their understanding of the topic under study. The class is divided into two groups. Each group is directed to compose and present a sketch depicting an authentic French dinner party making sure to adhere to and illustrate several of the directives found in the manual on French table manners developed by the class. The resulting presentations are thus informed by the cooperative work of the entire group.

This lesson on table manners and dining with the French is one of particular interest to students and, thus, the motivation level is quite high. In addition, students enjoy it because it appeals directly to their three major learning styles. The visual students are immediately drawn in by the striking images from the *Civilisation Française* Web site (Ponteiro, 2004) used in the warm-up phase of the class. The auditory students respond to the discussion segments of the lesson and the cooperative dialogues in the small groups about the interactive quiz questions. The haptic students are attracted to the manual/composition assignments and the final skits as they are an active means of demonstrating their competence in the target language. The construction of the manual on appropriate French table manners also has an authentic, intentional purpose as background and reference material for the class presentations. This helps motivate the students to strive to produce their best work when creating their entries because they will need them to complete their own work and because they know their classmates are relying on them for the necessary information as well. The culminating sketch

activity also embodies all five of the attributes of meaningful learning advocated by technoconstructivist methodology. It is an active, intentional undertaking where students cooperatively construct a short theatrical production using authentic cultural material gleaned from a reliable, well-constructed Web site. By selectively using high-quality material from a dependable source, appropriate technology has been integrated into the classroom with a maximum advantage to the students and only a minimal amount of time invested on the part of the professor.

"As Blake cautions, instructors will not likely be replaced by technology; however, 'the language teacher who does not utilize technology will, in all likelihood, be replaced by the language teacher who does'" (Beyer & Van Ells, 2002, p. 543). This caveat for foreign language professors is relevant for all university-level faculty members teaching the new Millennials. As illustrated in this article, the integration of technology into routine undergraduate teaching practices following a technoconstructivist model appeals to their learning styles and growing classroom expectations for technology use. University research also suggests this to be the case: "Segmented models show media-enhanced courses having higher success and lower withdrawal rates than traditional or fully online courses. When media-enhanced and fully online classes are matched with traditional sections, media-enhanced versions are superior in having greater numbers of students succeeding with an A, B, or C grade, and fewer withdrawals" (Hartman, Dziuban, & Moskal, 2000, p. 169). As the examples in this article have established, technology integration can be accomplished without sacrificing the social construction of knowledge valued by university teachers nor expending inordinate amounts of precious time developing complicated pedagogical materials. For these reasons alone, university faculty should embrace this new learning environment and take the steps necessary to incorporate educational technologies where appropriate into their classrooms. Yet Blake's warning implies that there is another compelling reason for faculty to incorporate pedagogical applications of technology into their undergraduate classes. The impetus for this change will come from the changing profile of the students themselves. As a fall 2002 study released by the Pew Internet & American Life Project discovered, "The survey of college students across the country found that 86 percent use the Internet, compared with 59 percent of the U.S. population" ("Web entangled," 2002, p. A1). For today's college students the "Internet has become an integral part of college life, and not just for studying . . . ." ("Web entangled," 2002, p. A1). Steve Jones, the report's lead author and chairman of the Communications Department at the University of Illinois at Chicago, described the technological reality of university students in this way: "For this group of college students, the Internet just works. It's like turning on the tap and get-

ting water or turning on the TV" ("Web entangled," 2002, p. A1). Just as students in higher education have seamlessly integrated the Internet into their daily lives, so will they come to expect technological applications to be integrated into their classroom environments as well. They have come to appreciate the contributions technology can make to enhance their undergraduate education. If the majority of a university-level faculty fails to recognize this, the students will go elsewhere. Thus, in order for university professors to continue to provide educational experiences students value, they need to adopt the tools of pedagogical technology that are familiar and important to them. As McKenzie said, "The tools of technology provide us with a rare opportunity to redefine how and what we teach. There is no longer a one-size-fits-all solution for providing instruction. This is a time of great growth . . . ." (2002, p. 6). Without such growth, professors risk losing their audience and their relevance.

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