Mash it Up! Using GarageBand to Enhance Second Language Learning

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Abstract: In testimony before a U.S. Senate Subcommittee a second language teaching expert cautioned that the U.S. is suffering from a language deficit. The cause of this deficit is a lack of second language learning offered by and supported in our schools. This paper suggests that Web 2.0 technologies may provide a solution. Included in this qualitative study is an examination of a pilot project conducted by a Spanish language teacher who used Web 2.0 technologies to extend and enhance second language learning with a group of fourth grade students. The students created mash ups using GarageBand, a music production application, and published them on the classroom web site. The project was not without obstacles. A close look at how these obstacles could be overcome is offered, followed by recommendations for implementing Web 2.0 in the second language classroom.

Web 2.0 Technologies to the Rescue

Second language teaching expert Rita Oleksak (2007) testified before the U.S. Senate Subcommittee on Oversight of Government Management reminding its members that learning a second language increases performance in other core subject areas. However, she cautioned them that the United States is suffering from a language deficit and that second language courses should be supported as part of the core curriculum offered in American schools: Foreign language capabilities are necessary for U.S. global competitiveness, national security and career vitality of American citizens.

While some American elementary schools do offer second language courses, there is typically little class time devoted to these second language courses. Further complicating second-language learning are the large class sizes found in most schools. This leaves few opportunities for quality learning and for use of the target language. Moreover, while students may have a willingness to communicate in the second language (MacIntyre, Baker, Clément, & Conrod, 2001), there are rarely opportunities outside the classroom to use the target language (Heining-Boynton & Haitema, 2007).

New technologies employed in the classroom may provide exciting innovations to help improve second language learning opportunities. These new technologies hold the promise of more effective teaching methods and strategies (McQuillan, 2006, p. 1). In

particular, Web 2.0 technologies, which allow the student to create, publish and share his own works, can extend student learning beyond the classroom. However, using new technology alone has little merit unless blended with the essential ingredients for teaching and learning a second language.

This paper employs a phenomenological approach (Schram, 2006) to examine a pilot project where a group of fourth grade students learning Spanish as a second language created mash ups (song remixes) in the target language. After they produced the mash ups, the students published and shared them on the web. The author (instructor) observed the students during the process and then conducted an informal survey to gauge how students viewed the project and their learning (Creswell, 2008).

A Recipe for Second Language Acquisition

If a recipe were written for how to learn a second language, there would be many essential ingredients included. However, there are several that seem to be most important: input, incidental language acquisition, motivation and willingness to communicate.

Communicating to the Student

Of these ingredients, input, or the function of understanding what is being communicated, is one of the most critical elements for second language learning (Zhao, 2005). Input then must be comprehensible to and meaningful for the student in order for it to be successfully processed by the student (as cited in McQuillan, 2006). Input takes on many forms – from conversations to books and audio to web sites. In order to direct the student's attention to important language structures the input should be emphasized. This can be done through various instructional strategies, such as highlighting the new vocabulary words when they appear in text.

Learning Incidentally

In addition to receiving comprehensible and meaningful input, second language can be acquired incidentally (as cited in Medina, 1993). Much like the way infants begin to acquire language by listening to spoken words, the student can learn the language without explicit instruction. When the student has opportunities to hear stories, watch movies or listen to music in a foreign language he may acquire vocabulary that was not necessarily intentionally taught. Incidental language acquisition helps the student learn new vocabulary in the context of complete sentences.

Motivating by Belonging

Student motivation for learning the second language also plays an important role in the success of learning a second language. In particular, Csizer and Dörnyei (2005) found that of the seven motivational learning components, integrativeness was the most important factor motivating second language learning. Integrativeness refers to the learner's desire to become integrated with the culture of the target language and to feel as if he is a part of the culture. This sense of belonging has been found to encourage greater amounts of input and language aptitude. Second language teachers are well advised to create an environment which encourages the feeling of belonging (McQuillan, 2006).

Willingness to Communicate

While the literature suggests that input, incidental language acquisition and motivation are important ingredients of learning a second language, there must also be ample opportunities to communication in the second language when the intention or willingness to communicate in the second language exists (MacIntyre et al., 2001). This willingness to communicate (WTC) can be enhanced when the student receives social support and when he has socially influenced-reasons for learning the second language. For example, his friends may use the language, his family may speak the language in the home, or he may be planning a vacation or study abroad in the country of the target language.

According to MacIntyre et al. (2001), these reasons, or orientations towards learning a second language, will in fact encourage the student to communicate in the target language even outside the classroom. Furthermore, authentic language use is more likely to occur during friendly social context situations. MacIntyre,et al. (2001, p. 383) suggested that the ultimate goal of the learning process of a second language should be to generate the willingness to communicate by fostering a "pedagogy of the streets." A pedagogy of the streets implies a teaching method which emulates the way a student may learn through his everyday experiences. For today's typical student everyday experiences may include listening to music and using the Internet.

Adding Spice with Music

Of the variety of strategies for teaching second language, music is considered one of the most fun and motivating strategies for students (Medina, 1993). While using music to teach a foreign language may not necessarily increase the student's second language acquisition any more than non-music instruction methods may, students prefer learning second language with music (Kanel, 1997; Medina, 1993; Shtakser, 2001).

Using music to teach second language supports each of the four ingredients for learning a second language as discussed here. For example, as input, music presents authentic language models and helps to make memorizing the vocabulary easier (Diadori, 1989). Additionally, music used as a teaching strategy to communicate (input) helps emphasize important vocabulary and grammatical structures of the target language (Kanel, 1997).

Music also provides incidental language acquisition opportunities when the words to songs exceed the vocabulary being taught and music can help students decipher correct pronunciation. In fact, Kanel (1997) suggested that music enhances the cognitive learning processes and helps break down obstacles that may inhibit learning. For example, the student who may not feel comfortable speaking the second language may realize some benefit through listening to the language in order to acquire tonal variations, language rhythm and language patterns.

Using music to teach a foreign language is more than merely a mood setter or entertainment factor (Medina, 1993). And where music is part of the student's everyday life, using it to learn the second language can enhance student learning (Shtakser, 2001).

There are caveats regarding proper song selection. Shtakser (2001) suggested that when using music in the second language classroom the teacher should carefully select the songs for their effective and proper use of the target language, and avoid songs which have too much slang. Choosing the right song can make an important difference in second language acquisition through music.

As a motivational factor then, music can directly impact integrativeness when it is representative of the culture of the target language (Csizer and Dörnyei, 2005) and when it can help the student feel a sense of belonging to the culture of the target language.

Singing provides opportunities in willingness to communicate and can be used as a way to enhance pronunciation of the target language.

Input, incidental language acquisition, motivation and the willingness to communicate are necessary ingredients for second language learning and they can be supported when music is used as an instructional strategy in the second language classroom.

How then do Web 2.0 technologies apply to the mix of second language learning and music teaching strategies? Whereas the music adds the spice to learning the second language, Web 2.0 technologies may serve as the spark to bring the ingredients to life.

Blending it All with Web 2.0 Technologies

Technology in the second language classroom is not a new phenomenon. It has been effectively used to enhance student listening, comprehension and verbalization abilities (Vogel, 2001). Technology, such as computer language labs, has afforded even the student too shy to speak out in class the opportunity to communicate in the second language and has helped provide more quality time for learning because the instructor can work with one student while the others are engaged in computer mediated-learning (Bower, 2007).

Emerging web-based technologies offer an "ever shifting blend of individualization and community involvement" (Godwin-Jones, 2006, p. 14). These same technologies offer a social dimension to learning a second language that educators can harness in order to create a language learning environment that mirrors the way students use the World Wide Web in their everyday lives.

The World Wide Web has opened up the student's opportunities to interact with the world (Oleksak, 2007). Exposure to the world provides the student with access to cultural diversity and when language-learning technologies are employed the student can embrace cultural diversity (Miller, 2007). The relevance of providing the second-language student with worldly interactions and exposure to the culture of the target language is underscored in the National Standards for Foreign Language (American Council on the Teaching of Foreign Languages, 1996). The standards contain numerous benchmarks requiring that the student learn not only the language itself, but also about the culture of the target language. Thus, technology can bridge the cultural gap and provide the student with a gateway to visiting other cultures (Shtasker, 2001).

The Internet also offers a naturalistic environment for learning a second language (Vogel, 2001). A naturalistic environment is defined as being equal to a visit or a stay in the target-language environment and one in which the student experiences first-hand the culture of the target language. Learning a second language in a naturalistic environment, where language can be acquired incidentally, can be as effective as formal language instruction. The Internet bridges the gap between real life and life in the classroom (Vogel, 2001).

Today, this statement is further realized as social networking tools, referred to as Web 2.0, provide new venues to interact, communicate, publish and create in ways that seem limitless. Web 2.0 is fast becoming one of the most useful tools in today's businesses and classrooms (Tapscott & Williams, 2006). Schools are realizing the power of Web 2.0 tools to enhance face-to-face as well as online courses, with opportunities to communicate, discover and apply critical thinking practices. With these new tools comes a wave of opportunities for the student learning a second language to experience cultures from around the world and to communicate in the target language (McQuillan, 2006).

How can Web 2.0 tools be used to support the essential ingredients for learning a second language while using music as a teaching strategy? The answer may lie with mash ups. Mash ups are songs that have been remixed with other sounds and lyrics to create new songs, which are then usually published and shared on the Internet (Tapscott & Williams, 2006).

Mashing it Up with GarageBand

Using computer-based music production applications, such as Apple's GarageBand, mash ups can be created and uploaded to blogs, wikis, web sites and other Web 2.0 related technologies.

GarageBand is a music production application, which can be employed with web publishing tools such as iTunes, blogs, wikis and web sites. GarageBand is a digital audio workstation which can record and play back multiple tracks of audio. Students can use it to create their own songs and podcasts to name just a few of its possibilities. It comes with 1,000 pre-recorded sampled and sequenced loops, and 100 professional-sounding instruments. Additional loops can be purchased to extend the musical opportunities.

GarageBand is produced by Apple. Currently, it is only available for Macintosh Computer (Mac). It is one of the components packaged in Apple's iLife suite of multimedia applications. As such, it is easy to integrate into any of Apple's applications, such as iWeb (web-site and blog builder) and iTunes (a music library and podcast application tool). GarageBand is one of the simplest tools in its genre and a good choice for novice music production (France, 2006, p. 2).

On the other hand, GarageBand takes up a significant amount of hard drive space. It requires running on Mac OS X 10.3.9 or later with at least 1GHz processor and 256 MB of RAM.

While this paper focuses on the specific features of GarageBand several similar music production applications are available (Table 1). For example, Sony's Sound Forge has been described as the most complete and easy to use of the PC versions (France, 2006). Compared side-by-side, GarageBand has the most user-friendly interface as well as the most features (number of pre-recorded tracks, loops, instruments) and combined within the iLife Suite, it offers the most bang-for-the-buck (France, 2006). Indabamusic.com is a free, web-based music production application. The main feature Indaba offers is a web-based community where musicians from around the world can connect to build and share their music. Audacity, a free audio recording application, is a simple-to-use application that is compatible on both Macs and PCs. Its features do not compare to those found in commercial applications. However, it is certainly an option for some.

Table 1 Music Production Applications

Tool	System	Applications	Processor/ Ram/Devices	Pros/Cons	Cost
GarageBand	Mac OS 10.3.9+	Create songs, music, podcasts 1,000 prerecorded instruments 100 loops	1.67GHz 512 MB Ram Soundcard	Easy to use Prerecorded tracks Compatible with many audio formats Takes lots of space Mac only	$79
Sound Forge	PC Windows 2000	Create songs, music, podcasts 30 sound effects 100 loops	400 MHz	Relatively easy to use Compatible with many audio formats Single track editing PC only	$70
Indabamusic.com	PC/Mac Web-based	Upload music and remix Collaborate with others to make music Blog music	n/a	Step by step process Collaborate worldwide with other musicians Share music easily No prerecorded tracks	Free
Audacity	PC & Mac	Create songs, music, podcasts	Suggested: 600 MHz, 256 MB Ram Soundcard	Easy and free No prerecorded loops Limited tracks for editing	Free

Using the basic features of GarageBand does not require much training. With a simple overview of the application the student will be well on his way to creating a song, podcast or musical piece that can be used in videos. Once the student has completed his GarageBand piece he can easily export it to iTunes. From here, the student can share the song with others using the iTunes Playlist sharing option or he can upload the song a web site, blog or wiki. He can also burn the song to CD using iTunes. When the student exports the song to iTunes he can convert the AIFF file produced in GarageBand to an MP3. This file type is small and readable on the Internet. It can also be burned onto CD-Rom.

Ready to Serve: GarageBand in the Classroom

There are many opportunities to use GarageBand in the elementary classroom. For example, one first-grade class used GarageBand to teach mathematical patterns. Students created musical patterns using GarageBand's loops. The students worked in groups and selected various loops, which were repeated at certain intervals to create musical sound patterns. Students then shared their work with each other using iTunes' Playlist feature. Students wrote reflections to discuss how they used GarageBand to create their musical patterns ("Musical Patterns," 2007). Another lower elementary classroom learned about poetic forms when the students created individual poems, which were then combined into a school song. The students used GarageBand to record their song. Afterward, they exported their song to iTunes from GarageBand and then published it onto a CD-Rom so that the song could be used during school events ("The School Song," 2007). A high-school Spanish class wrote Spanish lyrics and recorded them over Latin instrumentals they created using GarageBand. The students then published their completed songs on their classroom blog and listened to each other's work, after which they provided constructive feedback to one another. By uploading the songs to the classroom web site the students shared their songs with others outside of their classroom (Hayes-Gigante, 2007).

This last example provides some preliminary evidence that GarageBand may help extend and enhance second language learning. Based on the report, the author of this paper, who is an elementary school second language teacher, created a pilot project to test the application of GarageBand and web publishing tools with her fourth grade Spanish students. The project required that the students create mash ups to upload to the classroom web site. The goals of the project were to: employ the four essential ingredients for learning a second language; use music as a teaching strategy; connect to the culture of the target language; encourage students to use the target language; extend learning beyond the classroom; and have fun while learning and using the target language.

The Process

The twenty-nine students were grouped into teams of twos and threes. They were informed that using GarageBand they would create mash ups at least one-minute long, and which would include at least ten of the fifty vocabulary words they had been studying during the semester. During the first week of the project, the instructor worked with each team to help translate some of the non-vocabulary words used in their songs from English to Spanish. Students were given time to create their own band names in the target language. In their next computer lab class, the students received some basic training on GarageBand and the computer teacher reviewed Internet safety procedures and privacy issues, after which they listened to four different original music scores that the instructor had selected for use as the foundation for their mash ups. They were instructed to choose one of the scores and to begin creating their mash ups. Over the course of three weeks they practiced and then recorded their lyrics and added additional Latin-sounding instruments from GarageBand's World loops to create their new songs (mash ups). Once they completed their recordings the students published their mash ups

to the classroom web site. They listened to each other's songs and provided each other with feedback (Note: students were originally supposed to share their feedback online via a blog: however, a number of parents would not allow their students to participate in activities which involved their students using email. Therefore, they provided feedback in a face-to-face class session). They also completed an informal end of project survey. They were encouraged to share their songs with parents, family and friends by accessing the classroom web site.

Observations and Results

Observations made by this author suggest that the goals of the project were realized. For example, the students wrote songs that were meaningful (input) and they acquired incidental vocabulary because they used words in their songs, and for their band names, that were not limited to the vocabulary list. Using Spanish names for their bands and adding Latin-sounding instruments to their mash ups gave them opportunities to explore the culture of the target language. They had numerous occasions to use the target language, including writing, practicing and recording their Spanish-language songs. Using music as the main approach for teaching the language was an effective strategy to engage the students in the target language. Additionally, since students were able to use time during computer lab to produce their songs, their time learning the language was extended twofold. Finally, some of the students reported that they would like to listen to and share their songs with family members: An activity to engage in the language beyond campus walls.

According to an informal student survey the instructor conducted with the students, it appeared that the students truly enjoyed the project and especially liked using GarageBand. Most of the students said that writing and singing the songs was somewhat easy to do. However, while they liked working on the project, many stated that they did not want to do the same project again. Some of the students reported that they had some difficulty working with team members, while others truly enjoyed the group project. They all agreed that they liked working with GarageBand.

For this author (instructor), it was truly rewarding hearing students use the language. It was thrilling to listen to the students as they pronounced new words and used the rhythm of the music to guide their use of the language. Additionally, it was satisfying to know that the students were working on the target language twice per week (during weekly Spanish and Computer Lab classes) instead of once per week.

Obstacles

While the results of the project were positive, there were several obstacles, including team problems, song difficulty level, recording quality, time on task and scheduling conflicts, social aspects and parental concerns over the student use of email addresses.

Team Problems – Three of the ten teams had problems getting along. This was often because there was a third wheel who either did not agree with the other two or just did

not participate as expected. Additionally, two members (from different teams) were bossy with their teammates and this caused some conflict. Song Difficulty Level – Some of the songs that the students wrote were somewhat difficult for them to translate or pronounce. Recording Quality – Since the students had to record in the computer lab, rather than a sound booth, a lot of background noise, such as air conditioners, student voices, doors opening and closing, made its way onto the recordings. Time on Task and Scheduling Conflicts – There was not enough time during class periods for students to rehearse their songs, and as is typical with most schools, a number of events called students away from their classes. For instance, on the day several teams were scheduled to record their songs, they were called away to get their flu shots. On another day, a few students were absent, leaving several teams without their partners for recording. Social Aspects – A couple of the students were rather shy and recording for them was somewhat difficult or embarrassing. Others were nervous that random students would be able to hear their recordings; they felt embarrassed about their singing abilities. Parental Concerns – Some of the students' parents did not allow the students to use email, so student access to the classroom blog was limited.

Recommendations

Careful planning could help to overcome the obstacles. For example, depending on the age of the students engaged in the project, it may be more beneficial for students to be grouped with their friends. And, where students are considered too bossy by their teammates, remind them of the golden rule and group them with others whom they will work with well.

With this age group, it may prove wise to not only provide a list of vocabulary words but to also provide a fill-in-the-blank song where students could use the learned language to complete the song lyrics. In this way the instructor could ensure that the students used the learned vocabulary, and that sentence structure and pronunciation were appropriate for their language abilities.

To help overcome noise and other recording obstacles it is advisable to schedule teams for recordings while engaging the non-recording students in quiet activities. It is also wise to conduct the project over an entire semester in order to provide students with enough time to rehearse and to overcome scheduling conflicts.

For students who are too shy to sing, offer alternatives, such as a poetry slam, reading or rapping to the lyrics. Guide students through their singing, and remind them that they will not be graded on the quality of their singing, but rather on their participation and use of the target language.

Finally, to enable students to share feedback with one another online it is recommended that parental consent be obtained prior to the start of the project.

Conclusions

As this pilot project has demonstrated, extending and enhancing second language learning opportunities for the elementary student can be accomplished with Web 2.0 technologies which allow the student to create produce and publish songs in the target language.

GarageBand, and similar Web 2.0 music production and publication technologies, can engage the student's willingness to use the target language in ways that are motivational, interactive and which present important real life opportunities. These real life learning opportunities are important for today's second language student (Vogel, 2001).

Allowing the student to create his own foreign language music is consistent with essential ingredients for teaching foreign language (Kanel, 1997; Medina, 1993; Shtasker, 2001). For example, when the student has the opportunity to create an ethnic-sounding song, he may realize the sensation of integrativeness -- that is feeling part of the culture of the very language he is learning. He may also acquire incidental language by using words in his song that he may not have learned as a result of explicit instruction. Finally, by working in a naturalistic environment, where the music is representative of the target language culture, the student may have experience first-hand the culture of the second language.

Further research is needed to fully understand the implications of Web 2.0 technologies on second language learning. For example, studies on Web 2.0 technologies and second language learning should be conducted at the middle school, high school and college levels to determine the viability of Web 2.0 across age groups. Implementing an extended qualitative study and a quantitative research study based on the pilot project described in this paper may enable researchers to have the opportunity to better understand the implications Web 2.0 has on helping students to learn and use the target language. Further research may also lead to innovative pedagogical design of teaching second languages which integrate Web 2.0 technologies. Moreover, Web 2.0 technologies could prove useful to those teachers who wish to nurture positive attitudes towards second language learning by using elements from the student's everyday life (Heining-Boynton & Haitema 2007; Shtakser, 2001).

While infusing Web 2.0 technologies into second language learning is exciting, caveats exist. Using technology for the coolness-factor can prove unwise. Technology should only be implemented when it can successfully enhance student learning opportunities, not simply because it exists (Salaberry, 2005). Additionally, many well-intended second language web sites are long on design and short on content (Vogel, 2001). Careful consideration to the design of Web 2.0 technologies used in the second language classroom must be examined so that function prevails over form.

Furthermore, consideration of the benefits of face-to-face interaction cannot be overlooked. For students who prefer visual and kinesthetic learning methods to auditory, face-to-face classroom time avails the student tactile opportunities he may not receive in Web 2.0 environments. And while the web has been coined as a "gateway to visiting

other cultures" (Shtakser, 2001), it remains to be proven that Web 2.0 technologies bring to life cultural diversity and all the experiences that live interaction with native speaking people may bring to the student.

On a final note, while one of the fantastic opportunities experienced through Web 2.0 technologies is the ability to publish and socially interact with others, we must consider who is reviewing the student's published works and who is socially interacting with the student. If in fact the student is merely publishing to and interacting with his peers, then what benefit will he realize (Vogel, 2001)? If, on the other hand, a collaboration could be established between the student and a native language speaker, then perhaps the student would realize benefits beyond merely positive feedback. Organizing a network of native language speakers who could socially interact with the student learning the target language may prove the final step towards making Web 2.0 technologies truly effective in facilitating student willingness to communicate in a second language.

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