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Chapter 29
Digital Recording Platforms and Integrated Performance Assessments in Second/ Foreign Language Learning

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ABSTRACT

The teaching and learning of a new language can be daunting for both instructors and learners. Second/ foreign language teachers must overcome a multitude of impediments in which to bring students to higher levels of language learning. Research using digital voice recording software indicates that by integrating such technology into the curriculum, there are multiple benefits for both instructors and students. In this chapter, the author discusses the challenges language teachers face and then outlines six free digital voice recorder options that are available to teachers. Afterward, the author advances a series of curricular and procedural considerations for the integration of digital voice recordings in the language-learning classroom before discussing findings from studies focused on the use of digital recordings for educational purposes. The chapter concludes with a discussion of best practices using digital voice recordings for integrated performance assessments and a discussion of new avenues for future research.

INTRODUCTION

Developing and nurturing student engagement in the 21st century classroom continues to be a challenging endeavor regardless of content area given a multitude of obstacles such as the perceptions of irrelevance of content and the affective barriers. Moreover, the high stakes testing educational environment has overwhelmed many teachers as instructional time is lost due to working around testing schedules in the required content areas (Zellmer, Frontier, & Pheifer, 2006). While few would not support the notion of high educational standards and expectations for every student, *No Child Left Behind* has prioritized instruction in and the allocation of resources to the core areas of science, mathematics, and reading (Swanson, 2010), resulting in narrowing of the curriculum

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(Rosenbusch, 2005; Rosenbusch & Jensen 2004). The challenges teachers face can be especially daunting for novices, those within the first five years of teaching, because many times they are given the most challenging assignments with little to no professional support (Kalogrides, Loeb, & Teille, 2011) and have little voice in the creation of school policy (Futernick, 2007).

While all teachers learn to contend with such barriers to teaching and learning, second/foreign language (S/FL) teachers must learn to overcome other obstacles such as student perceptions of the irrelevance of authentic language applications and lowering student anxiety about learning a second language. Theoretically, when the affective filter is high, a student may experience anxiety, stress, and a lack of self-efficacy that hinders second language acquisition. Conversely, a low affective filter facilitates risk-taking behaviors when practicing and acquiring a new language (Krashen, 1981). For S/FL language teachers, performance anxiety — the feeling of uneasiness, worry, nervousness, and apprehension experienced by non-native speakers when learning or using the target language —is often reported as one of the most influential factors that can impede or facilitate language learning (Horwitz, 2001; Krashen, 1985; Swanson, 2013a). Despite the factors that can impede language learning, the use of innovative technology combined with best practices in teaching languages can help foster a low-anxiety language learning environment and improve student motivation to learn languages.

Working within these constraints and many others, teachers continue to work admirably to get the most out of every instructional minute in the classroom while trying to enhance student achievement as class sizes continue to increase. The purpose of this chapter is to discuss the challenges, which S/FL teachers face, present six digital recording platforms that can help improve P-20 S/FL learning by student lowering anxiety and increasing instructional time, discuss curricular and procedural considerations of using a free and open source software for oral language assessment, present existent research using technology for such purposes, and provide best practices for using digital recording software for assessment purposes.

BACKGROUND

At its core, S/FL instruction in the communicative classroom is dedicated to the ideals and the practice of developing second language proficiency (Swanson, Early, & Baumann, 2011). In order to become communicative, language learners must become literate in the three modes of communication: the Interpersonal, the Interpretive, and the Presentational (National Standards in Foreign Language Education Project, 2006). Instead of focusing learning on the four skills (reading, writing, listening, and speaking) in isolation, second language learners focus attention on three parts of a single goal, communication. Within the framework of the three modes of communication, language learners develop and demonstrate proficiency through thematic integrated performance assessments. That is, language learners first watch, listen to, and/or read an authentic text (e.g., newspaper article, podcast) and then answer informational and interpretive questions to assess comprehension. Instructors help guide learning by providing students feedback on their performance. After receiving feedback regarding the interpretative phase, students engage in interpersonal oral communication about a specific topic which is related to the interpretive text. Later, students perform in the target language by sharing their research, ideas, and opinions in the form of speeches, drama, skits, broadcasts, posters, brochures, and even essays.

In order to assess learner progress in the interpretive domain, objective measures such as multiple choice and true/false questions can be used, which, when constructed properly, allow for increased validity and reliability. However, assessment measures in the interpersonal and

performance domains take place in the form of rubrics, which can be problematic for several reasons. First, traditional face-to-face speaking assessments take place in the classroom, which tend to diminish instructional time (Early & Swanson, 2008). Second, the face-to-face assessment methods can cause anxiety for language learners and they may not demonstrate their second language competency (Early & Swanson, 2008). Third, if the assessment is conducted in the traditional face-to-face manner, the assessment's reliability is questionable because evaluation of student performance is not replicable. That is, student ability to negotiate meaning in the target language is not able to be assessed later by another evaluator because there is a lack of archivable artifacts. Students perform face-to-face in front of the instructor, and many times in front of their peers, in the absence of a second trained rater. Swanson, Early, and Baumann (2011) found that such a lack of a body of evidence toward language proficiency hinders overall performance evaluation because such artifacts could be used to measure similarities and/or differences in learner progress towards proficiency goals. The researchers also reported that these artifacts could support assessment outcomes and be presented as evidence of linguistic and cultural proficiency to a variety of educational stakeholders and even the learners themselves. However, until 2006 many schools were not equipped with the digital technology necessary for such endeavors (Early & Swanson, 2008).

In order to address such technology deficits, the US federal government funded the *America Competes Act* (H.R. 5116, 2010) that provided for educational development and progress at all academic levels in the Science, Technology, Engineering, and Mathematics (STEM) fields. While created primarily for the STEM areas, the initiative supported new language labs and expanded language learning capabilities. Combined with emerging technologies, the new labs revolutionized language teaching and learning in schools by allowing learners to become more integrated in the language learning process as they entered the worlds of blogging, podcasting, and creating and using thousands of apps designed for language learners. Such advances in language learning have generated a body of research that focuses on emerging technologies and their potential uses within the context of oral proficiency and assessment (Chan, 2003; Early & Swanson, 2008; Kvavik, 2005; Swanson & Schlig, 2010; Volle, 2005; Zhao, 2005).

FREE AND OPEN SOURCE SOFTWARE RECORDING TOOLS

While there has been unprecedented growth in emerging technologies in the new millennium, especially where language labs or other technology installations are concerned, many of these new capabilities may not be available to language students in schools and universities due to either shrinking budgets or policy restrictions. Rapid advances in personal digital technology and the availability of both hardware and software resources for voice recording hold potential to allow language instructors to use digital technology to gauge and measure oral proficiency. Given the multitude of digital tools available for this purpose at a variety of costs, the author outlines six interesting and free options that do not contain adware, spyware, or license limitations, and that do not monopolize computer processing and storage resources. However, it is important to note that instructors may not have the administrative rights to download and install software on their classroom computers. In these cases, it is recommended that instructors consult with their instructional technology support personnel to determine the best compromise between network security and pedagogical advantage.

Vocaroo: Designed as a Web-enabled recording service, *Vocaroo*© <www.vocaroo.com> offers users a simplistic Web interface. Students and instructors can use the device to record their

voices from any computer with a microphone. The recordings can then be sent via email to the instructor's email address. Once a recording is made, instructors receive an email with a link to the student's recording. One benefit of this Webware platform is that instructors can create and monitor multiple email addresses for each class in order to manage student recordings. It also has an embeddable widget that can be inserted into class Websites or blogs. However, a drawback is that instructors are unable to archive student recordings on work computers as a part of a body of evidence of student performance because the recordings remain on *Vocaroo* servers.

Freecorder: Another easy-to-use voice recorder is Applian Technologies' *Freecorder Toolbar*© < http://applian.com/asktoolbar/>. As the name implies, *Freecorder 3.0* is a free toolbar where users can record sounds, download videos and convert them into well-known formats from an Internet browser. After downloading the toolbar, uses will note that it includes a *Google*-based search menu.

The software installs as a tool bar at the top of the browser window and with one click of the mouse users can record, stop, pause, and play audio, using universally-recognized symbols for each of these functions. Once the record button is activated, the user's voice is displayed graphically in sound waves. Unlike *Vocaroo*, audio can be recorded and saved in either the popular *mp3* format or as a common *wmv* file. Unlike many other sound recorder software packages, *Freecorder* supports all *Windows* systems. A unique function of *Freecorder* is that it eliminates silence at the beginning and end of the recording. Recordings begin when it first detects audio and stops when the audio stops. This distinctive audio recorder is user-friendly and the interface is intuitive, which may be an advantage for younger users and less technologically-savvy language learners.

NanoGong: Named after its parent project, the Gong project, *NanoGong 4.2* can run on Windows, Mac, and even Linux systems. It is a free and open source recording option that can be used to record, playback, and save voice recordings. It only requires the Java environment to be installed on the computer. Due to the fact the *iPhones* and *iPad* are not able to use Java scripts, *NanoGong* will not run on these innovations. Prior to downloading the software <http://gong.ust.hk/nanogong/>, users can check if the computer is configured with Java in order to run the software. Unique among other free standing audio recording platforms, *NanoGong* is an applet. That is, it is a small application that performs a specific task that runs within the scope of a larger program such as a Webpage. It does not require a complicated setup procedure and users only need a simple Webpage in order to use it.

An interesting aspect of this recording tool is that users have the ability to manipulate the speed of the playback by increasing or decreasing the rate of playback without changing it. Additionally, *NanoGong* can also be used with course management systems such as *Blackboard*, *Moodle*, and *Sakai*. However, it uses only two types of audio format, *Speex* and *IMA ADPCM*, unlike other recording devices and platforms that use the common *mp3* file format. Fortunately, the *IMA ADPCM* format is one of the forms of the *wav* audio file formats and can be played using any music software.

Wavepad: Another free audio software program is NCH Software's *Wavepad* <http://www.nch.com.au/wavepad/index.html/>. Available for Windows, Mac, iPhone, and iPads, this recording software is more complex than the previously described recording tools in that it allows users to make and edit voice and other audio recordings. The interface is intuitive and displays voice waves graphically and has several pull-down menus. Users can cut, copy, and paste segments of recordings and even add effects like echo and amplification. Download is quick and easy. While a more professional version is available for purchase, the *WavePad Masters* edition, the free version is more than adequate for educational

purposes. The software supports a wide range of audio file formats including *mp3*, *wav*, *vox*, and *wma*. A benefit of using *WavePad* is that users can create and work on multiple audio files at one time and save them as one project. For example, instructors could listen to a student's recording and record comments on a second track. Then the file can be saved as one file and returned to the student as feedback.

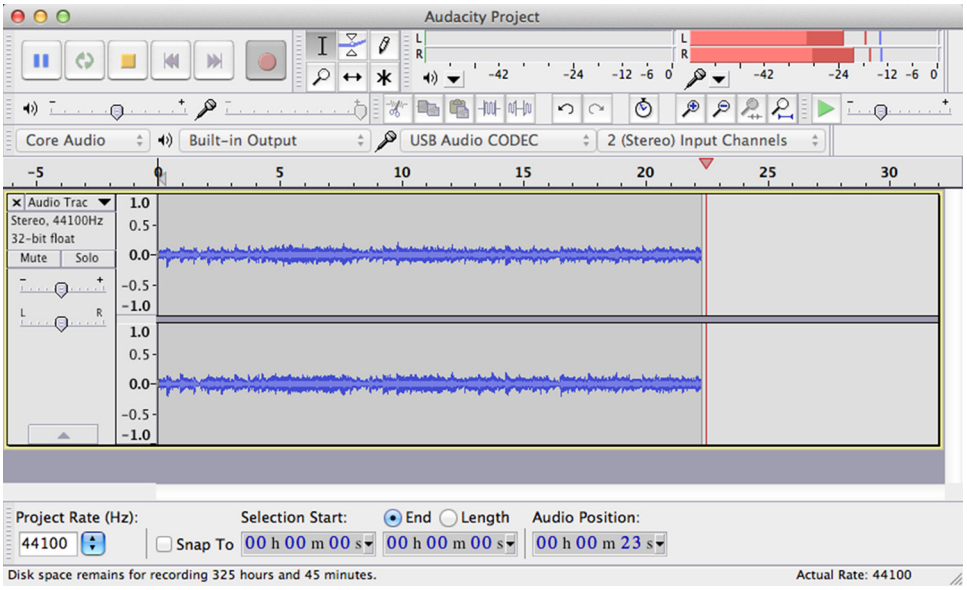
Audio Dropbox: In 1996, the Center of Language Education and Research at Michigan State University was established as a Language Resource Center through a Title VI grant from the US Department of Education. As part of its various projects and outreach activities, the Rich Internet Applications (RIA) toolset < http://clear.msu.edu/teaching/online/ria/> was developed to incorporate speaking and listening activities into language classes. The *Audio Dropbox* is free to users and can be put on any Web page. Instructors need to create an account which gives them access to all of the RIA. Instructors create individual dropboxes for assignments and students can access the dropbox and record themselves using the interface. Once recorded, the audio files are placed automatically in that dropbox. Student responses are collected by the RIA server, and are stored there for instructor to access. Recordings are automatically converted to the *mp3* format and can be listened to from the server or can be downloaded and archived on the instructor's computer. In addition to *Audio Dropbox*, the RIA includes *Broadcasts* for podcasting, *Conversations* for recording questions for students to answer asynchronously, *Viewpoint* for maintaining a repository of audio and video files, and an even *Video Dropbox*.

Audacity: One of the more popular free and open source recorder and sound editors available is Mazzoni and Dannenberg's (2000) *Audacity*® <http://audacity.sourceforge.net/>. It is available in multiple platforms (e.g., Windows, Mac, and Unix) and the latest release, *Audacity 2.0.3*, is supported in *Windows 8*. This latest release is complete and fully documented. The creators frequently make updates to the software so users are encouraged to check the Website periodically for innovations and modifications. The software downloads quickly and once installed, users will find its interface intuitive. It is a multitalented platform that can be used for converting audio files from vinyl records and cassette tapes into digital recordings or CDs as well as simply recording one's voice.

Additionally, users can edit a variety of audio file types (e.g., w*av*, *.mp3*). As Figure 1 shows, the graphic display shows sound waves of what is being recorded second by second and there are level meters to monitor volume levels before, during, and after recording. The familiar recording buttons along with others that quickly help users cut, copy, and even splice sounds together. *Audacity* has a function that allows users to slow the tempo of the recording so that language learners can listen for specific purposes. For example, instructors of Asian languages can use *Audacity* when having students listen for case markers and word boundaries. Instructors of other languages such as German or Portuguese can use *Audacity* to teach listening and speaking in terms of unit ideas, which is consistent with best practices (Cervantes & Gainer, 1992; Griffiths, 1992).

By default, audio files are recorded in the *wav* format. However, if users wish to save recordings as *mp3* files, they can download the *LAME™ MP3 Encoder* from the aforementioned Website. Once installed, recordings can be exported as *mp3* files. Mazzoni and Dannenberg do not distribute the encoder; however, a link to a third-party site is provided on the Website where the *LAME* encoder can be downloaded free of charge. While there are a variety of digital recording tools ranging from free to rather costly, studies using *Audacity* indicate that it is an effective platform in P-20 settings (Swanson & Early, 2008; Swanson, 2013b) and thus, will serve as the digital recording choice for the examples in the remainder of this chapter.

Figure 1. Audacity interface
Audacity® software is copyright©1999-2013 Audacity Team. The name Audacity® is a registered trademark of Dominic Mazzoni. Used with permission.



CURRICULAR AND PROCEDURAL CONSIDERATIONS

Given that much has changed since Cuban (2001) noted at the turn of the century that school systems have not been restructured completely to support the integration of technology for instruction, the STEM initiative certainly helped by provided funds for new technology and computer labs in schools for teachers outside of STEM fields to access, especially in unspecified areas such as language teaching. Even though schools continue to restrict teachers and students access to a plethora of pedagogical materials, including many Web 2.0 technologies such as blogs and wikis, instructors who collaborate with schools' technology specialists have been able to work install free or open-source software such as *Audacity* on school computers to facilitate teaching and learning (Swanson, Early, & Baumann, 2011).

When investigating the use of such software for educational purposes, one of the first important considerations to keep in mind is the availability to the technology for students. The digital divide —an economic inequality between groups such as different socioeconomic levels in terms of access to the necessary technology tools (Chinn & Fairlie, 2004)— poses a threat to using voice recording software for assessment purposes. Therefore, it is important to remember that many students may not have personal computers away from school, and it is essential to have the technology available in language labs, school media centers, and even on public library computers if possible.

Once it is determined that students and instructors alike have access to *Audacity*, the next consideration is to work within the framework of the curricular goals for language learning set forth by the P-12 school district or the language department. The goals will help determine the frequency of (e.g., weekly) as well as the purpose for the each assessment (e.g., formative, summative). The author advocates a backwards design approach that focuses on setting goals before choosing instructional methods and forms of assessment (Wiggins & McTighe, 1998). Backward

design typically involves three stages: (1) identify the results desired, (2) determine acceptable levels of evidence that indicate the desired results have occurred, and (3) plan learning experiences and instruction. The instructional planning should include a schedule for both assessment types as well the method for students to submit their digital voice recordings.

Several options exist such as having students email *mp3* files directly to the instructor or assigning students to use a computer in the school's media center or language lab where they can create and turn in their voice recordings to the instructor's a teacher's mailbox via a folder on the desktop. Another consideration is having students record their work, save it on an external hard drive or jump drive, and the deposit it into the instructor's digital folder in the media center or language lab. While emailing the *mp3* files appears relatively easy for students, the quantity of emails arriving and possibly even overloading a teacher's email server space may become problematic. However, such an approach has merit in some cases because such delivery can allow instructors to listen to and evaluate each student's work and immediately send the language learner personalized feedback once evaluation has taken place. Swanson et al. (2011) noted that such a method is an additional instructional burden time because of the time needed to download, save, evaluate, provide student feedback, and archive each recording. Instead, they recommend that students deposit audio files in digital folders on school computers (e.g., in labs, media centers). Once the recordings are inserted into such folders, instructors can copy all of the students' files from the folder to a laptop or even an *iPod* in order to evaluate students' oral language proficiency away from school. Another option is to create folders for each class using *Dropbox* and have students deposit assignments in the appropriate folder. *Dropbox* (Houston & Ferdowsi, 2013) is a free digital service that lets users save photos, documents, and videos in the cloud and users can share them easily either with a computer or mobile device. The files are encrypted using the AES-256 standard, which is the same encryption standard used by banks to secure customer data. Encryption for storage is applied after files are uploaded, and *Dropbox* manages the encryption keys. Even if files were deleted accidently, *Dropbox* keeps a one-month history and files can be undeleted (Dropbox, 2013).

Regardless of the collection system for oral assignments, the author recommends creating a file system for identifying student work. For example, a student's *mp3* file for a fourth week assignment could be titled using the student's name and the assignment name (jane_doe_week4). The use of such categorization allows instructors to identify quickly not only the assignment but also the student who turned in the assignment. A useful feature of *Audacity* is that once a file is named and saved, a supplementary tag window is displayed where users can add additional information about the recording such as comments, instructor name, and course title.

The purpose for such structure is essential in order to archive accurately students' work. To do so, instructors can quickly create and label folders using the Windows Explorer tool located in a PCs Accessories folder (accessible via the Start Menu by clicking on *Programs* > *Accessories* > *Windows Explorer*), For example, a Spanish 2 instructor may require students to deposit weekly oral assignments in a folder created on the school server in the media center titled "Spanish 2 Speaking Assignments." On her class computer, or even her own personal laptop, she can create one folder named "Spanish 2" on her desktop. Inside that folder she can create a subfolder for each week of the semester and name each one "Week 1," "Week 2," and so forth. As students deposit their work weekly, the teacher can copy/move the files to her computer, place each recording in its proper location, and then assess student proficiency outside of class time. Such files can saved as a body of evidence for a variety of purposes such as program accreditation, documentation of

target language proficiency as students progress through articulated language programs as well as having the ability to show students individually their progress in the language learning process.

RESEARCH USING AUDACITY AS A DIGITAL TOOL FOR ORAL ASSESSMENT

The author's research exploring the use of *Audacity* for assessing student speaking performance began in 2006 as faculty members at Georgia State University (USA) began to develop procedures and pilot test different voice recording systems in order to examine student speaking proficiency in more than a dozen languages and the effects of immediate instructor feedback (Swanson & Schlig, 2010). After carefully examining a variety of options, the *Wimba*® voice recorder (Wimba, 2008) was selected because it could be embedded in the course management system (*uLearn*). While the recording system was expensive to add to the course management system, several preliminary results from the implementation of voice recorder emerged. First, statistically significant improvements in students' target language pronunciation, use of the linguistic structure, and content of the speaking assessment were reported. Additionally, students commented that they felt less self-conscious and less anxious when using the software for speaking assessments, which is consistent with improved language learning and student motivation (Horwitz, 2001; Krashen, 1985; Swanson, 2013a). Language learners specifically noted that they experienced higher levels of anxiety when assessed in front of peers or in the traditional face-to-face method of oral assessment. When using the voice recorder, students expressed that their responses to language tasks were more creative and representative of their ability to use the target language. Interviews with students revealed that these language learners felt more relaxed during the assessment process and felt that they were more in control of their success in the target language. Interviews with instructors suggested that the traditional approach was time consuming and led to student disengagement. Instructors were quick to note the immediate loss of instructional time when assessing students during class time. They also noted that the face-to-face method lacks reliability of assessment. That is, the in-class speaking assessment is typically not recorded and available for a second rater to listen to and evaluate student performance. For these reasons, the instructors and students seemed to prefer the digital alternative.

Encouraged by the pilot test's findings, the author collaborated with public school teachers on additional studies that could include the use of free and open source software for digital voice recording purposes. However, the price of such recording platforms became an issue for public schools that could not afford such systems due to the economic turmoil that begin late 2007. Funds for such expensive digital voice recording systems were scare and there was a boom of cost-conscious alternatives emerging. After investigating several free digital voice recording alternatives, *Audacity* was selected for a series of studies at the middle and high school levels (Meister, n.d.; Swanson, Early, & Baumann, 2011). Findings from both studies indicated that both students and teachers preferred using digital voice recording software to traditional face-to-face speaking assessments. Additionally, the majority of the students reported that the recorded responses were a valid representation of their speaking ability in the target language and those recorded responses were more accurate than their responses given during face-to-face assessments in class. Overall, the students reported that the use of the digital technology helped improve their ability to communicate orally in the target language.

Similar positive findings were reported by the instructors. First, almost immediately, they noticed the extra time they had for instruction using *Audacity*. The instructors estimated that each in-class speaking assessment could devour at least one class meeting. In addition to the extra

instructional time, the instructors found that they could evaluate student performance quicker and more accurately. The recordings could be listened to multiple times if needed. They could even evaluate student responses at unconventional times and locations (e.g., at home on the weekends). Second, the instructors noted that student performance anxiety seemed to decrease measuring speaking proficiency out-of-class. The recordings sounded more animated and were even more creative. Third, students tended to complete the oral assignments better and the students' told the instructors that they felt they had an increased sense of control over their success during assessments.

In light of such findings, the researchers noted that students' improvements in linguistic accuracy and in course grades were not observed, mostly due to the short time frame (one semester) of the studies. Additionally, the instructors expressed concern that students could easily write their responses with the assistance of native speakers, and then read, record, and turn in their responses. While truly an issue, the instructors noted that it was relatively easy to tell when a student was reading a response that perhaps was not of his or her own creation. To avoid such possible challenges, the instructors recommended that digital voice recordings be used as formative assessments and only as summative assessments in a language lab where students could be monitored.

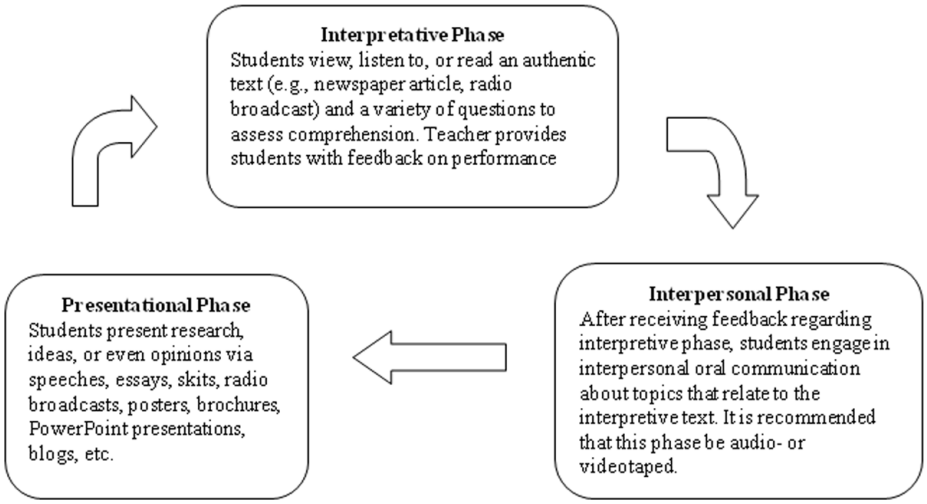
BEST PRACTICES FOR USING AUDACITY IN INTEGRATED PERFORMANCE ASSESSMENTS

As mentioned earlier, S/FL instruction can be conceptualized in the communicative language teaching approach that focuses on the three modes of communication: interpretive, interpersonal, and presentational (National Standards for Foreign Language Learning, 2006). Best practices in language teaching proficiency assessments place emphasis on developing and demonstrating proficiency through performance-based assessments. Via such assessments, learners working individually or collaboratively, use their collection of skills and knowledge to create a response to a prompt (complex questions or situations) or a product that can have more than one correct response (Liskin-Gasparro, 1996, 1997; Wiggins, 1998). A performance-based assessment that reflects the tasks and challenges learners will face in real world scenarios.

The integrated performance assessment is an evaluation of student ability in the target language that is used as a cluster assessment featuring three tasks with one task in each of the three modes of communication (Adair-Hauck, Glisan, Koda, Swender, & Sandrock, 2006). It is a multi-task assessment that is conceptualized within a single thematic context (see Figure 2). First, language learners complete an interpretive task, then use the information learned in an interpersonal task, and finally summarize their learning with a presentational task. That is, learners view, listen to, and/or read authentic texts in the target language, interact with learners in the target language in oral and written form, and then present in oral and written form to audiences of listeners and readers.

The Center for Advanced Research on Language Acquisition (2013) advocates a seven-step process for creating an integrated performance assessment and even provides examples of assessment units for instructors of various education levels. First, it is important to review the standards as planning takes place. Next, instructors must choose a theme. For the purpose of this example, the theme will be family and what it means to be a family. After a theme is selected, it is important to identify the goals and objectives. Typically, such goal statements are written in terms of student performance in the target language. For example, as part of this unit, students will talk about their families, describe others' families, discuss what constitutes a family, and how culture impacts the idea of family.

Figure 2. Integrated performance assessment



As the fourth step, the instructor develops the performance assessments and begins with the interpretive domain. For this example, the teacher may choose to use a written text about someone's family in a different country. Using *Audacity*, the instructor can record his or her voice reading the text outside of class and ask students to follow along reading the written version. Afterward, an assessment could be designed to ask students to summarize the key facts. Using *Audacity* again, students could record themselves individually summarizing the key information describing the family members and any important information that was offered in the text. Then, the instructor could listen to each recording and record his or her feedback on student understanding of the material. *Audacity* allows users to listen to a file and then when the instructor clicks on the *record* button, a second audio track is opened automatically below the student's audio track. Then, the instructor can record either while listening to the student's recording or wait until the recording is over and record feedback at the end. When the file is saved, *Audacity* blends the two recordings into one track. It is recommended that instructors record their feedback following the student's recording. Otherwise, the feedback may be difficult to hear as the student's voice is playing in the background. By having the original recording plus the instructor feedback on the same file, it is easier to archive and track progress. The file with feedback can then be returned to students promptly and in-class comprehension checks could be done to ensure that all students understand the message of the text. Once student understanding of the interpretative pieces is achieved, instructors then proceed to the interpersonal task.

Here, students could be assigned to discuss with a classmate their families in similar terms as what was heard during the interpretive task. Rubrics are used for assessment of student performance and should be given to the students in advance so that learners are aware of what the interpersonal and presentational tasks are and what the criteria are for exemplary performances and products. Adair-Hauck et al. (2006) recommend that the interpersonal communication should be either video- or audiotaped.

For the presentational task, students could conduct independent research on a famous person of interest in a particular country and then create a video presentation that contains both photos and short video clips of that person. Students could use *Audacity* to overlay their voices as they provide narration during the presentation. After the tasks are developed, instructors need to design

the rubrics that will be used to evaluate student work in each of the three modes. The final three steps require instructors to identify the linguistic structures (step 5) and vocabulary (step 6) that students will need for the unit. Finally, the instructor must design communicative activities so that the students can build the necessary skills to perform the three aforementioned tasks.

It is recommended that if instructors choose to use *Audacity* as part of the integrated performance assessment, time is taken to teach language learners how to use the program. The author suggests having classes meet in computer labs and have guided instruction with time to become acquainted with *Audacity* and its many features. A few minutes spent presenting *Audacity* to students' pays dividends later in terms of answering a plethora of individual students' questions. The author recommends that teachers give students a few minutes to read *Audacity's* Table of Contents under the Help pull down menu and then have students practice recording a response to a practice language assessment task. Here, the teacher may show an example of an interpersonal task and the accompanying scoring guide. Then, the teacher can open *Audacity*, record a response, revise it as necessary, and then deliver it to the appropriate storage area for evaluation by the instructor. Next, the instructor can let students create an oral response to the same task whereby they practice recording, editing, deleting, re-recording responses, and finally submitting final work. Finally, the instructor can explain to students the procedures for collecting assignments for evaluation purposes and delivering feedback to students on the performance assessments.

CONCLUSION AND DIRECTIONS FOR FUTURE RESEARCH

S/FL teaching and learning can be a stressful endeavor and language teachers need to be aware of students' perceptions of the irrelevance of language learning as well as the affective variables that affect second language acquisition. Krashen (1981, 1985) theorized that when students' affective filters are heightened, they experience increased anxiety, stress, and a lack of self-efficacy, which tend to impede second language acquisition. However, as students' affective filters decrease, students are more likely to engage in risk-taking behaviors when practicing and acquiring a new language. When combined with the conceptual framework of the three modes of communication, there is merit in using digital recording platforms in the S/FL classroom for assessment purposes. Research on the assessment of language learners' speaking abilities indicates that the free and open source platforms for digital voice recordings can be used effectively in P-20 settings (Early & Swanson, 2008; Swanson, 2013b; Swanson, Early, & Baumann, 2011). Among the research findings regarding the use of *Audacity* in S/FL teaching and learning, student performance anxiety had been found to decrease while learner confidence about their own success in the S/FL learning process had been found to increase (Swanson, Early, & Baumann, 2011). Additionally, the research indicated that instructors noted an increase in valuable instructional time, more flexibility when scoring student performances, and that having a digital artifact that was archivable led to more reliable scoring of student proficiency (Early & Swanson, 2008; Swanson & Schlig, 2010).

Given the current high-stakes educational environment created by *No Child Left Behind*, it is imperative that language teachers develop new strategies to address the needs of 21st century learners in order to improve student achievement in innovative ways. For S/FL teachers, classroom time is lost when assessing students using the traditional face-to-face method. Assessing students' speaking proficiency using integrated performance assessments using free and open source digital recording platforms holds promise for P-20 instructors as well as language learners (Early & Swanson, 2008; Kvavik, 2005; Swanson, Early, &

Baumann, 2011; Swanson & Schlig, 2010; Volle, 2005; Zhao, 2005). Such performance assessments may be able to decrease students' perceptions of irrelevance of language learning tasks, increase the reliability of the assessment, and provide important artifacts that can be used to document student achievement in the target language.

In this chapter, various cost-conscious digital recording systems were presented as tools for measuring students' second language speaking proficiency. While there are advantages and disadvantages to each, instructors need to employ a backwards design approach in order to determine appropriate objectives and outcomes for its use before integrating the technology into instruction. In the author's research, *Audacity* continues to be a practical, useful, and effective digital tool for students and instructors. The program downloads and installs very quickly on a variety of different operating systems. Its interface is intuitive and becoming familiar with its features only takes a few minutes. While it can be argued that many learners and schools continue to be caught in the digital divide, the author recommends that instructors work with public school libraries and other public entities in order to encourage officials to allow *Audacity* to be placed on public computers so that all students have access to the technology. Even though policy at all levels of government has been designed to distribute education funds equitably, research indicates that policymakers continue to allocate more resources to students who have more resources, and less to those who have less (Carey & Roza, 2008).

Armed with such knowledge, *Audacity's* use in the S/FL language classroom appears even more promising given the recent economic turmoil that began in late 2007. Years later, schools continue to have financial issues and the integration of free and open source technologies may be able to help engage learners while not requiring huge financial commitments. Further research would be valuable to uncover additional benefits of using such software, especially in elementary schools. It has been argued that language learning should occur during the early years of development because younger individuals tend to demonstrate lower levels of performance anxiety (Dulay & Burt, 1977; Krashen, 1981, 1982; Omaggio Hadley, 2001). Such research might reveal deeper understandings that could assist adolescents and adults as they begin language learning.

Additionally, research from interdisciplinary perspectives on the integration of digital voice recordings in other content areas such as social studies, math, and even the arts would be valuable. It would be informative to know more about how *Audacity* might be used in other content areas to improve student learning. Finally, research focusing on learner disabilities such as dyslexia using digital recording software might lead to developments and improvements on methods to support student learning. Issues around the teaching and learning of a S/FL may be similar to the challenges teachers in other content areas face. By developing innovative educational practices, perhaps interdisciplinary approaches to teaching and learning can lead to improved outcomes for both learner and their instructors.

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KEY TERMS AND DEFINITIONS

Affective Filter: The Affective filter is a theoretical screen between learners of a second language and the input needed to learn and acquire a second language. If the filter is high, the learner is blocking out input. Conversely, if the filter is lower, more input is received. Learning environments with low levels of anxiety are deemed better for language learning.

MP3 Files: A digital audio recording file format that compresses the size of the file for storage purposes.

Oral Language Assessment: The evaluation of an individual's speaking ability in the target language.

Performance Anxiety: The fear an individual experiences when requested to perform in front of an audience.

Second/Foreign Language (S/FL): For the purposes of this chapter, whether an individual is part of a language program termed as *foreign language*, *immersion*, or even *second language*, the teachers and their students are collectively grouped as S/FL teachers and students because they share the same educational goal, learning a new language.

Three Modes of Communication: The three modes describe the Interpretive domain (the appropriate cultural interpretation of meanings that occur in written and spoken forms), the Interpersonal domain (active negotiation of meaning among people), and the Presentational (the creation of oral or written messages).

Traditional Method of Oral Language Assessment: An approach where instructors assign speaking tasks and then listen to and evaluate student performance in class.