

CHAPTER 5

Discussion

Introduction

The purpose of this study was to examine middle school Spanish teachers' experiences using QR codes that linked to audio content as a means by which to support the development of learners' L2 listening comprehension skills outside of the classroom. Following the Systems Approach Model (Dick, Dick, & Carey), the teachers were first asked to provide information about their learners and context via an online survey. They then underwent a short training on the use of the audio QR codes, and were provided with templates to use or build upon when designing a homework assignment that involved the use of the audio QR codes. The teachers implemented a formative trial of the audio QR code activity, and then consulted with the PI regarding any adjustments that could be made to use the tool more effectively. The Spanish teachers then conducted a final trial of an audio QR code homework assignment and were interviewed regarding their experiences with this transmedia approach to content delivery. The research question that guided this study was: *What are the benefits and barriers to using Quick Response (QR) codes that link to audio resources as a means by which to support students' listening comprehension skills in the beginning stages of foreign language acquisition?*

The intent of eliciting these benefits and barriers to audio QR codes was to explore how an emerging technology might be implemented in a foreign language learning context in a way that had the potential to positively impact teaching and

learning. QR codes were chosen as the technology under investigation, primarily because of the ease by which they can be employed to create transmedia materials. These materials help bridge the gap between traditional paper-based resources and those that are formatted in other media. Teachers can create transmedia worksheets that instantly link students using mobile devices to language examples in other formats.

Chapter 4 contains the results of the survey and interviews, which were compiled and analyzed, including triangulation of the information whenever possible. The data were grouped into four main themes (1) the teachers' experiences creating and distributing the audio QR codes, (2) issues related to student access, (3) the perceived impact that using the audio QR codes had on student learning, and (4) the kinds of feedback that the teachers received from the affected parties. This chapter will unpack some of the significant findings within those themes, and relate them to previous literature in the areas of QR codes, foreign language learning, and transmedia materials with audio. This discussion is followed by implications and recommendations for the use of a transmedia approach to delivery of audio content in language learning. Finally, there are recommendations for future research with audio QR codes to support listening comprehension based on the results of this study.

Interpretation of the Findings

Overview

The following figure displays the major findings related to the research question, grouped into the two categories of identified 'benefits' and 'barriers' to using audio QR codes for listening comprehension activities outside of the classroom. These results were

compiled from the coded interviews with the eleven participating Spanish teachers after the formative and final trials of the audio QR code listening comprehension activities. All eleven of the participating teachers reported that participating in the study and experimenting with the audio QR codes was a positive experience. At the conclusion of the study, all of the teachers also indicated that they planned to continue using transmedia materials containing audio QR codes for either similar or new types of listening comprehension exercises during the next school year. This study did not involve the recording of the students' reactions to the audio QR codes, nor did it attempt to measure the effectiveness of this technology tool and pedagogical approach in terms of quantitative academic gains. These benefits and barriers, therefore, are the teachers' impressions on the feasibility of using this pedagogical technique as a means by which to support students' listening comprehension skills in the early stages of Spanish acquisition.

Following the figure is a deeper examination of the benefits and barriers to audio QR use in this context as determined by the analyses outlined in Chapter 4.

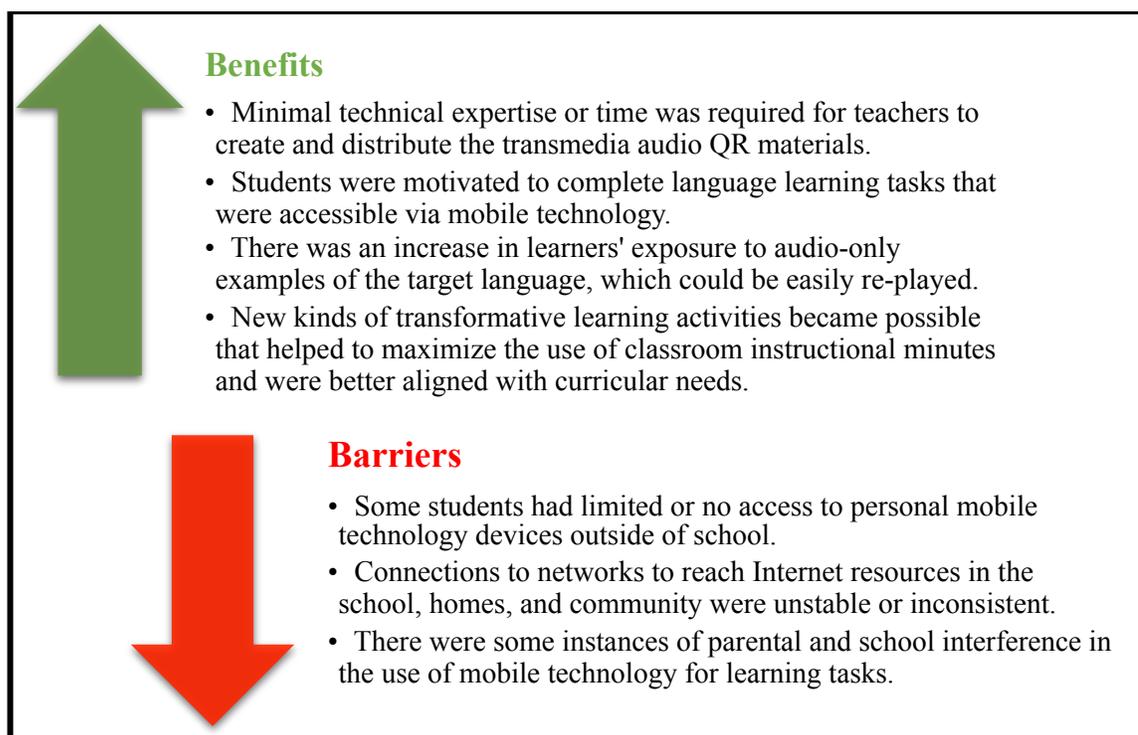


Figure 11: Summary of benefits and barriers to audio QR code materials

Benefits

The benefits that the teachers in this study identified (in Figure 11) merit further investigation, as they provide a strong rationale for attempting to use audio QR code listening activities as a way to increase exposure to the target language. Each of the four benefits is discussed briefly below.

Benefit 1: Teachers Need Minimal Technology Expertise and Time to Create and Use Audio Materials

Previous studies (Middleton, 2009; Burston, 2013) had noted that despite an interest in creating and distributing audio materials to support language learning such as podcasts, teachers were deterred from attempting or regularly producing audio resources due to the high level of expertise and the time investment required to create and distribute

the audio materials. The needs analysis and interview responses in this study also uncovered that the Spanish teachers had little access to existing recorded audio resources in L2, even when bundled with other course materials such as school-provided textbooks. The participating teachers moreover noted that it was difficult to find audio-only resources on the Internet that matched with their curricular needs and their students' ability levels. After the short professional development training session, the teachers were able to quickly create QR codes with a free audio recording and hosting web site, such as Vocaroo, or use readily available software such as GarageBand to record .mp3 tracks and then make a QR code linked to a Google site hosting the file. The Spanish teachers reported that the whole process of creating the audio materials and transmedia written worksheet containing the QR code took an average of 30 minutes, which was not substantially longer than it would take for them to design a typical homework assignment without the audio component.

Benefit 2: Learners Use Mobile Technology for Academic Language Tasks

The increasing percentage of teen ownership of Internet-connected mobile devices (Andersen, 2015) was evident in the student population of the eleven participating teachers, as nine of them reported that at least 75% of their students had access to mobile technology outside of school. In a discussion of the students' abilities to easily learn how to scan the QR codes, one of the Spanish teachers remarked that today's students are much more 'appy' than they are 'webby,' and require minimal training to use new applications. The only technical issue that prevented some students from using a QR scanning application was their confusion about which of the available QR code readers to

download. Several of the Spanish teachers reported after the formative trial that they would recommend specifying the exact application that students should download and use instead of leaving it up to the students to choose from the many free options. In a reflection of the current state of mobile technology use in the schools, the teachers reported some instances of the students being pleasantly surprised to be asked to use their mobile device for completing a language-learning task. While it has been noted that modern students see technology use as “central to how they organize and orientate their learning” (Conole, et al., 2008, p. 522), there is still a substantial disconnect in teens’ ubiquitous use of mobile technology outside of the classroom for social connection and entertainment, and how rarely they are asked to use their devices for learning tasks (Prensky, 2001; Kolb, 2008; Lemke, 2010). Some of the teachers mentioned in the interviews that their students were surprised by the fact that the QR code allowed them such easy access to the audio files. Additionally, because students were asked to complete the listening comprehension exercises for homework, the use of mobile technology to support learning tasks came to the favorable attention of several parents.

As members of K–12 school communities try to come to an agreement about how to best manage the use of smartphones in the classroom, there is an opportunity for teachers to design out-of-class mobile learning tasks, such as the audio QR code exercises in this study, that require students to use their devices as learning tools. Convincing learners and parents that mobile technologies can be used to increase academic achievement should also help with overcoming the barriers found in this study (see below).

Benefit 3: Learners Gain Additional Exposure to Audio-Only Materials.

Part of the conceptual framework for this study involved the consideration of audio-only listening comprehension materials as a way to decrease the cognitive load for students trying to make sense of the new auditory language input. Sweller's (1998) cognitive load theory proposes that reducing the amount cognitive load for a given task can promote the transfer of new information from a learner's working to long-term memory. As language acquisition is a complex learning task with a high intrinsic cognitive load (van Merriënboer & Sweller, 2005, Shadiev, et al., 2015), the additional input in the target language for these students was restricted to audio-only form, without images or motion media elements that might distract the learner by activating the visual channel or adding extraneous cognitive load.

As the students' language proficiency was not measured prior to or after they completed the audio QR code homework exercises, the impact of the materials on the growth of their listening comprehension skills is unclear. What was revealed by the interviews, however, was a new awareness on the part of some of the teachers and students regarding the importance of the role of audio-only materials in language acquisition. Two of the participating teachers revealed that after the students completed the transmedia worksheet in the formative trial, there was a class discussion about the way that the audio clips forced them to listen more intently and purposefully. According to the teachers, other topics related to listening comprehension skills also came to the attention of the students while they were completing the audio QR code activities outside of the class, including an appreciation of the increased speeds at which the native

speakers used L2, and how the accents of native speakers from various Spanish-speaking regions differed. One Spanish teacher expressed that after the formative trial she had a valuable conversation with the students examining the kinds of brain processes that were happening during the decoding of the foreign language, and that she wished they had discussed ways to foster listening skills in L2 earlier in the school year. Another Spanish teacher reflected on using the audio-only materials during the final interview, and revealed that she was skeptical at the start of the study about the value of the recorded audio instead of video, but after monitoring how the students interacted with the audio QR materials found it to be excellent practice for situations in which the visual clues that learners sometimes rely on were absent, such as in a phone conversations.

Although there is a long history of using audio-only materials in the teaching and learning of foreign languages (see Chapter 2), the abundance of free video that has become available on the Internet – especially since the launch of YouTube in 2005 – has influenced the choices that language instructors use when searching for examples of the target language to provide to their learners. The participating teachers noted in the interviews and needs analysis that they often chose to create their own audio materials, as it was difficult to locate examples on the Internet that were not accompanied by visuals. The ease with which the teachers could create the audio resources for listening comprehension activities resulted in a new-found ability in many of the learning contexts to have the students focus on listening skills based on the sound of the new language alone.

Benefit 4: Teachers Use Technology for Transformative Learning Experiences

Another key concept driving the design of this study was the importance of providing language learners in the early stages of language acquisition with an abundance of linguistic input to help them develop morphological and syntactical competencies in the target language (Allright & Bailey, 1990). Linguistic input in an auditory form informs the learner's phonetic and phonological development in L2 (Tschiner, 2011), and is especially important in foreign language acquisition, as the language learning takes place outside of a culture in which the target language is spoken. Additionally, second language learners must put forth more conscious effort than L1 learners in order to process auditory input, resulting in an inability to use and retain much of what they hear (Vandergrift, 2007). For these reasons, it was proposed that teachers of foreign languages in schools may find the limited class time available to expose students to auditory examples of L2 insufficient for growth in listening comprehension skills.

The questions in the needs analysis related to current practices in the teaching of listening comprehension revealed that some of the teachers were already assigning listening activities as homework, but that this exposure compromised a small percentage of the time in which students heard auditory examples of the target language. The responses to the question in the final interview about how the audio QR code transmedia worksheets compared with other methods that teachers had previously used to provide learners with audio samples in Spanish were remarkable, and perhaps the most important finding from this study. Of the eleven teachers, six indicated that they had never previously been able to assign audio listening tasks as homework, and all of the

remaining five teachers indicated that they had assigned very few homework assignments that required a listening component because of logistical concerns with the technology or a lack of suitable audio resources.

All of the Spanish teachers indicated that they had plans to continue using the audio QR codes in some form during the school year following the study, with only one stating that the activities would most likely be completed in the classroom instead of as homework due to a school policy restricting credit for homework tasks. Several of the teachers cited that preserving instructional minutes by shifting some listening time to homework was a major advantage to using the audio QR codes. This result was anticipated by Wallinger (2000), who called for more research into extending foreign language class time through the purposeful use of homework assignments in the areas of listening and speaking, which traditionally consume a large portion of teacher-directed class time. The participating teachers also noted that the feature of being able to replay the QR audio recordings as often as needed was very beneficial for all students, including those with special needs. Similarly, the Spanish teachers noticed that the listening practice outside of school with the audio QR codes was helpful in the acquisition and retention of new Spanish vocabulary words.

When introducing a new technology to a learning context, it is important to examine how the technology is integrated with the existing pedagogical practices. Puentadura's (2010) SAMR framework was used as a reference for the construction of some of the interview questions in this study order to clarify whether the Spanish teachers used the audio QR codes as a "substitution, augmentation, modification, or redefinition"

of tasks that had previously been completed through other methods. More than half of the teachers who took part in the study stated that the audio QR codes allowed them to assign tasks that were ‘previously inconceivable’ (redefinition) and the remaining five teachers praised the creation and functionality the audio QR code listening activities as being a ‘significant’ improvement over previously used methods (modification). Thus, the use of the audio QR code technology had a transformative effect on the practices of the teachers and learners in the area of foreign language listening comprehension practice. This conclusion merits further investigation into transmedia materials for foreign language learning, including a quantitative assessment of students’ listening comprehension skills before and after the use of audio QR codes for practice outside of the classroom.

Barriers

The barriers that were identified at the conclusion of the study and summarized in the Figure 10 above (student access to personal mobile devices, Internet connectivity, and parent and administrative restrictions on student mobile usage) are problematic because they are outside of the control of the teacher. In Chapter 1, Ertmer’s (1999) barriers to technology use were proposed as an explanation to why Spanish teachers might not be utilizing newer technologies to enhance students’ listening comprehension skills in L2. These barriers include (1) a lack of awareness of the capabilities of a new technology (2) low self-efficacy in experimenting with new application (3) the need for specialized training (4) a concern for alignment with current pedagogical methods and (5) outside constraints such as school or parental limitations. The following table aligns Ertmer’s

barriers with the needs analysis and interview results from this study. In the third column the barriers to the use of audio QR codes in foreign language learning settings are categorized as either low, medium, or high, based on the PI's knowledge of middle school public school settings and interactions with the Spanish teachers during the course of the study. The barriers that were most evident as the result of this study, as described by the participating teachers, are present in the last row of the table and labeled as 'high' due to the fact that, as noted above, these are more difficult for foreign language teachers to overcome.

Ertmer's Barriers (1999)	Audio QR Code Study Results	Barrier to Audio QR Code Use?
<i>Low self-efficacy in experimenting with new applications</i>	<ul style="list-style-type: none"> ▪ All teachers rated themselves as either 'confident' or 'very confident' in the needs analysis question on self-efficacy related to technology use. ▪ The participating teachers self-selected to join in the study because they wanted to use more technology in their teaching and were interested in QR codes. ▪ None of the Spanish teachers asked for technical help during the formative trial, and none requested additional training or technical help between the two trials. 	Low
<i>Lack of awareness of the capabilities of a new technology</i>	<ul style="list-style-type: none"> ▪ The needs analysis revealed that 2 teachers had previously used QR activities, and 4 already knew how to create them. ▪ The remaining teachers indicated in interviews that they were aware of audio QR codes, but did not necessarily know how best to integrate them into a language learning context. 	Medium
<i>Need for specialized training</i>	<ul style="list-style-type: none"> ▪ 2 of the teachers had already learned independently how to create and use audio QR codes ▪ Interview data revealed that while most teachers preferred the individualized training, several were also open to learning in alternate ways (conferences, online) if the opportunity was presented ▪ Time to seek out and participate in training for new technologies was a concern for teachers. 	Medium
<i>Concern for alignment with current pedagogical methods</i>	<ul style="list-style-type: none"> ▪ The needs analysis and interviews revealed that teachers wanted to include more audio examples of L2 in their teaching but were not sure about the best way to design or introduce these activities. ▪ The templates and discussion with PD trainer helped teachers investigate which kinds of activities they prefer for listening comprehension practice. 	Medium
<i>Outside constraints such as school or parental limitations</i>	<ul style="list-style-type: none"> ▪ Some students did not own personal mobile devices and/or have the capability to connect to the Internet. ▪ Many parents of students in the study maintained control of the mobile devices; some restricted the ability of students to download needed applications, while others sometimes restricted device usage. ▪ Internet (wi-fi) access in the schools, homes, and alternate locations in the community where students might complete homework tasks was inconsistent and prevented some students from accessing the audio content. ▪ Some school policies restricted the use of mobile in the 	High

	classroom, which made training the students on mobile tasks for homework more difficult. Other school policies on whether homework could be mandatory or graded influenced the motivation of students to complete the audio QR listening assignments outside of class time.	
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Table 12: Ertmer's (1999) *Barriers to Technology Use* aligned with results of audio QR study

Application and Recommendations

The possible means by which to address and overcome the barriers to using scanning technology, such as audio QR codes, in foreign language teaching and learning are discussed below, having been split into two categories: (1) those within the immediate control of the classroom teacher and (2) those that will need participation from others in order to overcome.

Overcoming Barriers Related to Teaching

While teacher self-efficacy in the use of new technologies was not a factor preventing audio QR code use in this study, it is a challenge that remains for some practicing and pre-service teachers who have not been trained or supported in the use of emerging technologies that might enhance foreign language learning. The possible solutions for boosting self-efficacy in the use of new technologies also relate to the rest of the barriers that Ertmer (1999) anticipated regarding teacher use of technology: lack of awareness in the capabilities of new technologies, need for specialized training, and concern for alignment with current pedagogical methods.

Blake (2013) counsels foreign language teachers that as a profession they must “move beyond a simple computer functional competence (knowing how to use the tools) toward both a critical competence (realizing what the tools are good for) and then, finally,

to a rhetorical competence (understanding how these tools will help transform the learning environment)” (p. xvii). Thus, this kind of experimentation with emerging technologies to support learning should be a regular part of a foreign language teacher’s practice and goal for professional development. It is important to note that the in-service Spanish teachers who participated in this study responded very favorably to the flexible design of the training, in which the tool was introduced and options were presented for possible ways to use the technology to support listening comprehension. The Spanish teachers were given the freedom to modify the activity suggestions or create their own from scratch to best fit with their particular learning objectives. This flexibility in the trial implementation of the audio QR codes led to a wide variety of uses that were aligned with the curriculum and best met the needs of the language learning students.

Schools can provide opportunities for teachers to experiment with educational technologies either by actively setting aside non-instructional time for in-service sessions, hiring professional trainers to work with individual or groups of teachers in the classroom, or cultivating mentor teacher versed in technology use for foreign languages to work with teachers identified as technology novices at the school, community, or district level.

Reaching pre-service teachers during their undergraduate or alternative preparation education classes is also key to spreading the awareness of available and emerging instructional technologies that could positively affect foreign language learning and teaching. As part of their methods instruction, pre-service teachers should be introduced to the kinds of technology hardware and software that can best support their

students' language acquisition, both in and out of the classroom. Luke & Britten (2007) note that technology integration should be “woven throughout college in foreign language teacher education programs” as an essential 'programmatic component' (p. 254).

Finally, encouraging pre-service and practicing foreign language teachers to participate in a professional learning network will aid in the sharing of new tools and techniques related to technology-assisted language learning. Two of the Spanish teachers in this study had already made plans to formally share their experiences with the audio QR code listening activities at the school and district level. More than half of the participating teachers in this study heard about the possibility to join and learn more about audio QR codes through contacts in a regional professional teaching group for Spanish teachers. School administrators can allow time for practicing teachers to attend local, regional, and national conferences and workshops that help foreign language teachers build technology skills and connect with other professionals in their field.

Overcoming Barriers Related to Outside Elements

Internet connectivity within schools is a factor that teachers have little control over, although they can try to work with school district information technology offices to suggest that upgrading broadband access within schools become a priority. If teachers are asked for input on the allocation of grant money or bonds, this can be another opportunity to voice the need for infrastructure upgrades and a BYOD policy in the place of school investment into hardware devices. They can argue for increasing connectivity speed by citing high levels of student device ownership and the shifting of computing to cloud-based services (Anderson, 2015; Kaestner, 2012). Internet connectivity in the

students' homes and communities is a wider issue, with some even terming the inability of low-income students to access the Internet after school hours in the home leading to a 'homework gap.' (Horrigan, 2015). Although the FCC recommended that the U.S. government build a nation-wide, free 'super wi-fi' network for public access as early as 2009, this initiative never came to fruition (King, 2013). Until such connectivity is guaranteed, teachers assigning these tasks may need to specify to students that a stable wi-fi is necessary for the audio QR to work as planned so that they know the best times and locations to attempt the homework activities.

An unexpected barrier in relation to mobile technology that this study revealed was the restriction in some cases by parents and school administration on mobile technology use by the students learning a foreign language. Parental restrictions fell one of two categories: (1) caregivers maintained the passwords for the mobile devices and would not allow students to download the QR application needed to scan the QR codes and (2) caregivers viewed access to the mobile device as a privilege, and sometimes confiscated the device if students lost privileges because of undesirable behaviors, thereby making it impossible for the learner to complete the homework task. One of the teachers in the study proposed sending a permission slip home with students at the start of the school year requesting that students taking Spanish be allowed to download a particular QR code scanner application that would be used throughout the school year, much in the same way that some teachers send home required supply lists with materials that students will need to bring to class for learning tasks. This permission slip would ensure that students have the correct application loaded on their mobile device, and also

inform parents that the students might require the use of their mobile devices for graded homework assignments.

Restrictions by school administration also fell into one of two categories: (1) no student mobile technology use was allowed in the classroom, so teachers had no opportunity to train the students on how to use the audio QR codes, and (2) policies that did not allow teachers to assign grades for homework completion, thereby greatly reducing student homework completion rates. Of the ten school settings in which the study took place, three did not allow the use of mobile devices in the classroom at any time, even with the approval of the classroom teacher. Several teachers reported that some students had difficulty using the audio QR code worksheets during the formative trial, and recommended that before assigning these as homework tasks there should be time dedicated in the classroom to model the ways to use the transmedia materials. Homework completion rates reported by several of the participating teachers were low (less than 50% in some cases), which they credited as partly due to the school policy regarding homework and grading or credit. Teachers in such setting wanting to take advantage of transmedia materials as a way to preserve instructional minutes would have to negotiate with the administration for an exception to the rule, perhaps by giving the students extra time to complete assignments outside of class as more of a 'project' instead of as a daily homework assignment while working on a particular unit.

The principal barrier to using the audio QR codes as a regularly assigned listening comprehension homework activity in this study was the fact that mobile device ownership was not universal among students in any of the participating school settings.

When asked in the final interview what barriers remained to the regular use of audio QR codes in their teaching practice, all 11 of the participating teachers remarked that device ownership was a concern. The Spanish teachers asked their students before the formative trials of the audio QR code homework about device ownership, but even after assuring the teachers that they would have access to a device, there were students in many of the settings who were not able to complete the homework worksheets. Some students found that the device they anticipated having access to was not available, or, in one case, a student did not want to admit to a lack of device ownership in front of classmates.

Stockwell & Hubbard (2013) recommend that language teachers planning to incorporate more student mobile technology use into their pedagogy should follow eight underlying principles, the fourth of which pertains to this problem of access. They caution that teachers must be sensitive to issues related to personal technology ownership, including “whether the learner has a mobile device, what device the learner has in terms of compatibility and functionality, how consistent device connectivity is, and what the expense is for using that device for the planned operation,” adding that when inequities are apparent, the teacher must provide alternatives so that all students can complete the learning task (p. 9). All of the teachers in this study had a contingency plan for students who identified themselves as not having access to a technology device that could scan QR codes at home. These options included extra time to complete the assignment, the ability to work with a friend or group, the chance to come to the language classroom at another point before/during/after the regular school day to use a device in the classroom (sometimes even the teacher’s mobile device), or access to a school-owned

device to borrow on the day the homework was assigned. Many of the teachers also provided an alternative means by which students could access the audio track without having to scan the QR code itself, such as by sending the student the audio .mp3 file via e-mail, or by adding the audio track as a file on the teacher's web site so that it could be activated on a desktop or laptop computer in the home just by clicking on it and play via the computer's media software.

Implications

Transmedia Materials to Support Foreign Language Learning

Pence (2012) explains that students today are already using multiple forms of media concurrently in their pursuit of learning without “waiting for anyone to give them permission or guidance” (p. 138), and questions why educators continue to view the use of mobile technologies that allow students access to such varied resources as a ‘distraction’ instead of an ‘asset’ (p. 139). There are a limited number of studies that have been conducted in the U.S. centering on the use of transmedia materials to support traditional formal learning. These tend to be in fields where either (1) the learner can greatly benefit from viewing simulations or that help elucidate complex topics, such as in STEM or engineering education (Paulsen, 2014; Stansell, et al, 2015) or (2) in first language learning contexts in which the multi-media elements are used to enhance the understanding of literature in a method termed ‘transmedia storytelling’ (Kalogeras, 2013; Rodríguez-Illera & Castells, 2014; Hundley & Wong, 2016).

Transmedia storytelling involves the purposeful choosing and integration of a variety of media in order to enhance the understanding and engagement of learners

interacting with a work of literature. This pedagogical approach is alternatively known as designing a ‘distributed narrative’ in which students are able to move easily between media resources according to their interest, learning style, or academic need (Pence, 2012; Rodríguez-Illera & Castells, 2014). In addition, transmedia storytelling can appeal to young students today who consistently engage with Internet resources outside of school contexts, thereby more effectively blending the worlds of social use of technology and learning into what has been called ‘edutainment’ (Kalogeras, 2013). The research on the effectiveness of transmedia storytelling as a way to enhance learning is limited due to the relatively recent emergence of technologies that allow teachers and students to easily access and create Internet-hosted materials; however, early studies with limited numbers of participants show promise in increasing not only student engagement, but also the use of higher-order thinking skills when moving between media platforms while interacting with learning materials (Warren, Wakefield & Mills, 2013; Lamb, 2011; Raybourn, 2013).

In 2012, Pence suggested that very few teachers were experimenting with transmedia storytelling because it requires a high amount of technical knowledge to be able to prepare and distribute the different media resources. The results from the study upon which this paper is based (which required teachers to create and distribute QR codes linking to audio resources) indicate that, at least for this group of participants, such technical barriers to using multi-media resources were not present. This indicates that there is potential to use transmedia materials to facilitate the use of distributed narratives in foreign language learning contexts.

Researchers in Europe have been more engaged than those in the U.S. in studying such use of mobile technologies to access multi-media to support foreign language learning. This may be due to the fact that multilingualism is an expectation for learners in most countries in Europe, not merely a school requirement for graduation or college acceptance. In 2010, the Education and Culture Executive Agency of the European Commission conducted an investigation into exactly these kinds of multi-media and transmedia activities called the “Study on the Impact of Information and Communications Technology (ICT) and New Media on Language Learning” (Stevens & Shield). This mixed-methods study examined the “intersections of ICT, media, and language learning” (p. 8) and included data on topics that have been explored above, including the use of mobile technologies, best practices in using emerging technologies to support foreign language learning, and the challenges that remain for teachers and students when considering this method of content delivery. Among the conclusions, the EACAE lists these three that are directly related to the use of new technologies: (1) learners are not using technologies frequently for language learning purposes, though the younger the respondent the more frequent the use (2) while 9 of 10 respondents said they found technology use helpful for language learning (computers, television and radio especially), only one in four admitted to using a mobile phone for this purpose, and (3) the respondents viewed entertainment media (digital video and music) as being more helpful for language learning even than courses and materials specifically designed to be accessed via technology (pp. 29–30). The study participants also noted that learning a foreign language with the help of technology offered them more flexibility and autonomy

A more recent study of teens in several European countries examined the use of personal technologies while learning English as a foreign language. Interestingly, the researcher came to a similar conclusion regarding the learners' preferences for using video and music, in this case specifically to enhance listening skills (Szyszka, 2015). The researcher notes several advantages to using these types of media to support foreign language listening, including that they are authentic materials and that students are motivated by their use. She calls for more research into learners' opinions on the best ways to use CALL to help with autonomous foreign language learning.

The results of this study indicate that some barriers may remain to requiring students to regularly access media that can be used as listening materials outside of the classroom, but that with careful planning and support from others in the school community this technique has the potential to positively impact foreign language learning.

Implementing Transmedia Materials

The discussions above note the possibility of teacher use of transmedia materials to support foreign language learning and the barriers that may interfere with such implementation. The following figure seeks to illustrate the factors that should be considered when teachers seek to implement transmedia homework activities with mobile technologies as a part of a middle school foreign language learning context. Figure 12 categorizes the aspects into the four areas of Access, Technical Training, Community, and Pedagogy. Whether this kind of transmedia technique is attempted by practicing teachers or discussed with pre-service teachers as a potential strategy, these four areas

must be investigated so as to minimize the obstacles to using audio QR codes (or other types of transmedia materials) for language learning support.

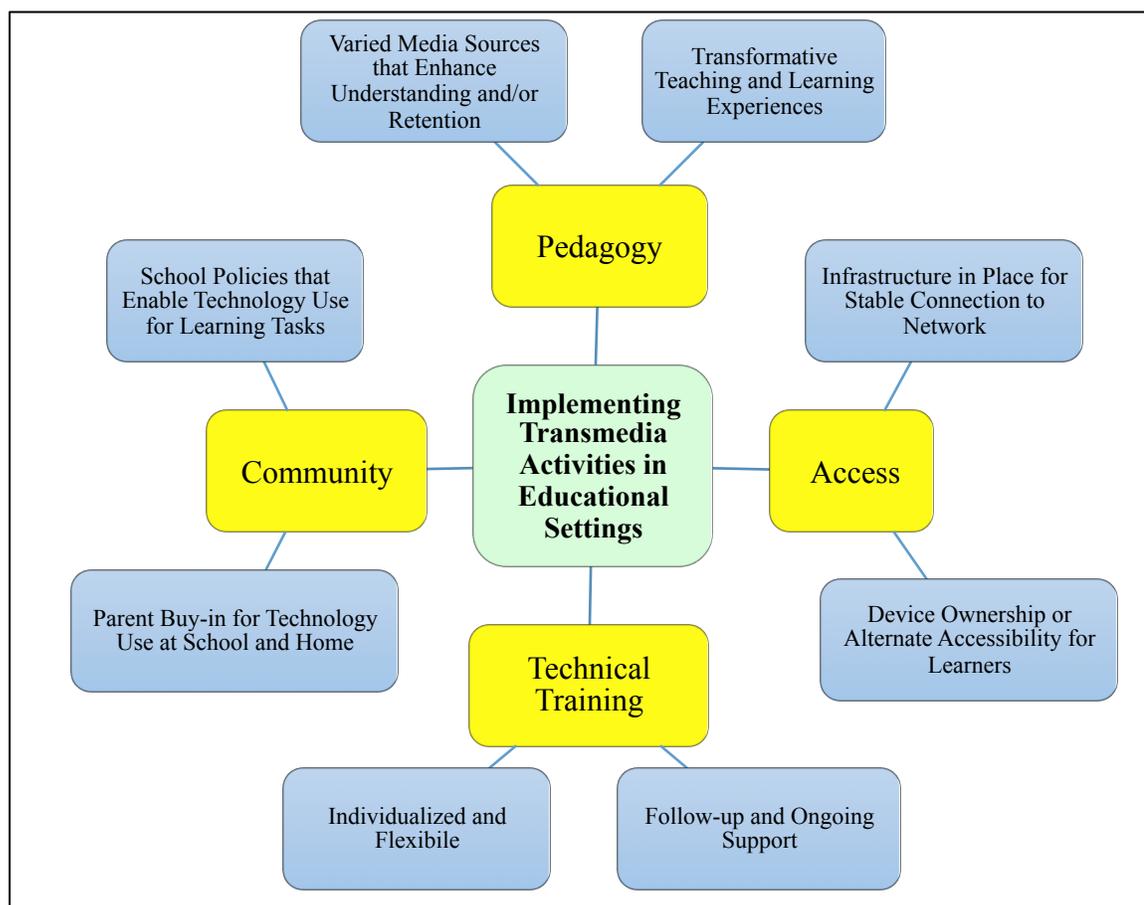


Figure 12: Implementing transmedia in educational settings

These recommendations are based on the results of this study using one type of transmedia worksheet, and are also informed by previous research into best practices for experimenting with transmedia materials in language learning contexts. Fleming (2013) advises that instructors should carefully consider the kinds of media that will best meet the needs of the learners and engage them. She also emphasizes that teachers think about how the students can use the materials in real-life situations outside of the class in order

to extend learning beyond the few minutes they are able to spend with the teacher each day.

Limitations

As noted in Chapter 3, the small sample size and selection criteria of only middle school Spanish teachers for recruitment to this the study limit the generalizability of the conclusions. The fact that the participating teachers volunteered to take part in the study due to an existing interest in the use of new technologies to support foreign language learning could mean that the positive reaction toward this audio QR method and the ease with which the teachers created the transmedia materials would not be consistent over a more diverse population.

The teachers and students had access to the technologies required to make and use the transmedia materials, which may not be the case in many schools and districts. During this time period, the best application to assist teachers in creating and hosting audio QR codes was Vocaroo.com; if this tool is not available, teachers wishing to attempt a similar use of transmedia materials might consider the use of GarageBand or similar audio recording software and then take advantage of the feature in Google Classroom that allows for the instant creation of a QR code to any linked file (in this case, the .mp3) by means of right-clicking the uploaded file name. Other technologies with similar functionality may emerge in the near future, so teachers should choose whichever tool is the easiest for them to use and allows for the best access by students.

During this study the Spanish teachers had access to the PI for support if technical difficulties arose; teachers wishing to experiment with new technologies independently

may not have a technology expert available within a school or district who can provide such support. Other factors outside of the control of the study, such as teacher and student motivation to try the audio materials via QR code during the short span of the study, may reduce the validity and reliability of the findings.

The qualitative nature of this study, with teachers reporting only their perceptions of this method of delivering audio content, created results that would need to be triangulated with quantitative measurements of gains in student achievement in L2 listening comprehension skills in order to gauge a more accurate outcome of the effectiveness of this approach.

Suggestions for Further Research

The results of this study, while limited in generalizability to other contexts, merit investigation for practicing foreign language teachers interested in expanding their use of instructional technology. As noted in the analysis of the summarized benefits and barriers, the information that the teachers provided in the needs analysis and interviews was anecdotal and qualitative in nature. As the participating teachers indicated that they planned to continue the use of audio QR materials to support listening comprehension skills, following up with their actual use in a longitudinal study could provide a new perspective on the usefulness of this tool. It might also be beneficial to conduct focus groups with foreign language learners to hear about their experiences using the audio QR codes firsthand, and whether or not they felt that this method of delivering audio content was convenient and helpful to their growth in listening comprehension skills.

Rahmatin (2011) states that audio-only resources force the listener to be more

attentive, but that their impact on understanding is not clear. Quantitative elements could also be added to a similar study, wherein students undertook a diagnostic assessment before the intervention of the audio QR code homework exercises, and then the results were compared with the scores of a post-intervention assessment. This data could be used for comparison with the Spanish teachers' perceptions of the value of this method for supporting listening comprehension growth.

Expanding from the original context of working with teachers of middle school Spanish would add another dimension to the results; seeking qualitative and quantitative data from both teachers and students in classes from different age and ability levels – for example, high school students in their fourth or fifth year of language study – could be informative as to the best stage of foreign language learning in which to introduce audio QR codes in order to positively impact in academic growth. Another direction for research would be to recruit teachers and middle or high school students from the study of other world languages, such as French and Italian. Including participants learning non-traditional languages such as Mandarin or Arabic might help to show if audio recordings to aid listening comprehension and phonemic awareness in languages without traditional Roman alphabetic characters yield different conclusions.

There are multiple research avenues to pursue related to the use of transmedia materials and language learning. One option not explored in this study is to experiment with different types of audio, including music or literature performed orally in the foreign language as a way to enhance both cultural understanding and listening comprehension skills (Failoni, 1993). The area of 'transmedia storytelling' is currently centered on first

language skill-building as instructional designers present learning elements from different media platforms to enhance understanding (Lin, Chang & Chen, 2007; Lamb, 2011). It would be fascinating to examine how foreign language teachers should choose and combine media such as audio, video, images, simulations, and interactive web sites that could be accessed through the use of mobile technology and QR codes. Research into this kind of transmedia-supported foreign language learning might help explain whether it is possible to use these materials to immerse second language learners in the kinds of rich language experiences that are present when first language learners acquire language in a cultural context.

Summary and Conclusion

Chapter 5 concludes this study on audio QR codes for listening comprehension support in the early stages of learning Spanish as a foreign language. The significant findings include several potential benefits to using this emerging tool to support L2 acquisition, including (1) the ease by which teachers can create and distribute transmedia materials with custom audio recordings, (2) the ability for language learners to access content independent of location via mobile technology, (3) an increase to learners' exposure to audio-only materials that force close listening without extraneous cognitive load, and (4) the ability for teachers to design transformative learning experiences that were previously impossible because of restrictions on time and resources. The participating Spanish teachers also identified some barriers that might make implementing the regular use of audio QR codes into their pedagogy a challenge, such as (1) the need for flexible training in emerging technologies, (2) inconsistent Internet

connectivity that interferes with students' abilities to access web-hosted materials, (3) outside constraints such as parental control of mobile devices or school policies restricting mobile device usage for learning, and (4) the fact that personal device ownership or even shared access outside of school is not guaranteed for all students.

Recommendations included some possible strategies by which teachers and other members of the community, such as parents and school administrators, could work towards agreement on policies that would allow students consistent access to mobile technology devices that can be used for quick routing to audio language learning materials. Among the suggestions for further research within the same age group and language context are conducting a quantitative analysis to measure growth in listening skills after interacting with the audio QR materials, and collecting the students' perceptions of the practicality and effectiveness of the audio QR codes for supporting listening comprehension. New directions for future study might include expanding the examination of audio QR codes to students of different ages and abilities, and to the study of other foreign languages.

In their suggestions for incorporating technology into the modern language learning classroom, Castleberry & Evers (2010) praise teachers' use of a variety of media, including digital audio, that add 'malleability' to the learning context and provide "opportunities for learning that may not be possible with print text and traditional teaching methods" (p. 202). It is hoped that the exploration of such media in this study, which allowed learners to easily access Spanish language audio materials via mobile

technology and QR codes, will add to the knowledge base from which foreign language teachers can draw inspiration for teaching 21st century learners.

APPENDICES

Appendix A: Questions for the Online Needs Analysis

Establishing Instructional Goals for Listening Comprehension

Question	Response Options
<p><i>Which listening comprehension skills do you consider to be the most important for your students to acquire at this stage of their Spanish language acquisition and development?</i></p>	<ul style="list-style-type: none"> • recognize a new vocabulary word spoken in Spanish and be able to correctly say or write what it means in English • correctly spell/transcribe a word spoken in Spanish • follow a conversation in Spanish and understand the meaning of the interaction • listen to a sentence in Spanish and transcribe it accurately • listen to a sentence in Spanish and correctly translate the meaning into English (oral or written) • listen to a longer passage (not a conversation) in Spanish and understand the main idea of the text (informational or literature) • Other (please specify) type in
<p><i>Are the students currently expected to work on listening comprehension activities during class time? If so, how many minutes on average do they actively focus on listening comprehension skills in each class period/meeting?</i></p>	<ul style="list-style-type: none"> • No • Yes; 0–10 minutes average • Yes; 10–15 minutes average • Yes; more than 15 minutes on average
<p><i>Are the students currently expected to work on listening comprehension activities outside of class time as homework or for review/practice? If so, how many minutes on average per week are they expected to complete listening comprehension homework tasks?</i></p>	<ul style="list-style-type: none"> • No, students do not complete listening activities outside of class • Yes; when assigned these take 0–10 minutes average • Other (please specify) type in
<p><i>How do you currently provide audio examples in the foreign language for your students?</i></p>	<ul style="list-style-type: none"> • I read texts and dialogues for them in class as a listening activity. • I play audio recordings in class (no visual)

	<p>from a CD/DVD or online .mp3 track.</p> <ul style="list-style-type: none"> • I play video clips in class from a CD/DVD or online web site (specific site for language learning or video site like YouTube) in which the only visual is a transcription. • I play video clips in class from a CD/DVD or online web site (specific site for language learning or video site like YouTube) in which there are visuals (video or images). • I assign listening to audio-only clips for homework that students listen to on a CD/DVD. • I assign listening to audio-only clips for homework that students listen to on a web site (including teacher web site). • I assign listening to video clips for homework that students listen to on a CD/DVD. • I assign listening to video clips for homework that students listen to on a web site (including teacher web site or YouTube). • Other (please specify) type in
<i>How important do you think it is to provide audio examples alone – without video – to your students?</i>	<ul style="list-style-type: none"> • Very Important • Somewhat Important • Not Very Important • Not at all important
<i>Do you have any comments to add about this topic?</i>	Optional question; short answer type in

Exploration of the Learner Characteristics and Available Resources (Students)

Question	Response Options
<i>What grade level(s) do you teach?</i>	<ul style="list-style-type: none"> • 6th • 7th • 8th • Special Needs • Other (please specify) type in

<i>How many students are in your class(es)?</i>	Short answer; type in number and any comments
<i>How often do the classes meet?</i>	<ul style="list-style-type: none"> • every day for a 35–55 minute period • some but not all days per week for a longer period of time • Other (please specify) type in
<i>How long have your students been studying Spanish?</i>	<ul style="list-style-type: none"> • This is their first year of study. • One year • Two years • Other (please specify) type i
<i>Are your students considered to be working at an honors or standard level?</i>	<ul style="list-style-type: none"> • Standard level - there is no Honors class at this level • Standard level - there is an Honors class offered at this level • Honors level • Other (please specify) type in
<i>Are students allowed to use personal Internet-connected mobile devices in class?</i>	<ul style="list-style-type: none"> • No - my class policy is that no mobile devices can be used in class • No - the school policy is that no mobile devices can be used in class • Yes - the students are sometimes allowed to use these for certain class activities • Yes - the students are allowed to use their mobile devices at any time for classwork
<i>What percentage of your students would you estimate have access outside of school to a personal Internet-connected mobile device such as a tablet or smartphone?</i>	<ul style="list-style-type: none"> • 0–9% • 10–24% • 25–50% • 50–75% • 75–90% • 90–100% • Other (please specify)
<i>How comfortable are your students when trying new technologies?</i>	<ul style="list-style-type: none"> • Very comfortable • Somewhat comfortable • Somewhat uncomfortable • Very uncomfortable

	<ul style="list-style-type: none"> • Not known
<i>Do you have any comments to add about this topic?</i>	Optional question; short answer type in

Exploration of the Learner Characteristics and Available Resources (Teacher)

Question	Response Options
<i>How confident are you in your overall tech skills?</i>	<ul style="list-style-type: none"> • Very Confident • Confident • Not always confident • Not at all confident
<i>Do you have access to existing audio materials (textbook or other source of multi-media materials on CD, .mp3, or online)?</i>	<ul style="list-style-type: none"> • audio materials that match with the class textbook on a CD or DVD • audio materials that match with the class textbook in .mp3 file format • audio materials that match with the class textbook on a web site that students can access • audio materials not associated with the class textbook (include self-created) on a CD or DVD • audio materials not associated with the class textbook (include self-created) in .mp3 file format • audio materials not associated with the class textbook (include self-created) on a web site • No access to existing audio materials • I might have access to resources, but generally prefer to make my own audio examples for the students. • Other (please specify)
<i>Have you ever used QR codes before for instructional purposes?</i>	<ul style="list-style-type: none"> • Yes • No • Other (please specify or comment if needed): type in
<i>Do you know how to make a QR code from a given URL?</i>	<ul style="list-style-type: none"> • Yes • No

	<ul style="list-style-type: none"> • Other: type in
<i>Do you have enough familiarity with audio technology that you would be able to create audio samples?</i>	<ul style="list-style-type: none"> • Yes, I think so • Maybe, if I got a quick reminder • No, I have never tried this before • Other (please specify) type in
<i>Do you have access to technology with which you can create audio recordings?</i>	<ul style="list-style-type: none"> • Yes, I know that I have access to technology with these capabilities • Maybe....I have access to some technology but I am not sure if it has the capability to create audio recordings • No, I am sure that I do not have access to technology that can be used to create audio recordings • Other (please specify) type in
<i>Do you have a teacher web site that can host audio resources?</i>	<ul style="list-style-type: none"> • I have a teacher web site to which I can upload .mp3 files • I have a teacher web site on which I paste links to online audio resources • I have a teacher web site but I have never tried adding a link or audio file to it • I have a teacher web site but I know that it cannot be used to host or link to audio files • I do not have a teacher web site that I can customize • Other (please specify) type in
<i>Do you have any comments to add about this topic?</i>	Optional question; short answer type in

Appendix B: Training Script

Technical Training on Creating Audio Resources and QR Codes

- Discuss the results of the needs analysis and explain the technical training segments that will be included in the PD.
- Following the flowchart listed above, train the teacher to create QR codes that link to hosted audio content.
- Discuss the learning objectives that the teacher provided on the needs analysis.
- Suggest one of the three possible exercises that best aligns with the stated learning objective, needs of the students, and context.
 - Dialogues in the foreign language to listen to for recognition of words and phrases
 - Scrambled stories to rearrange in order after listening
 - Cloze activity with blanks for students to fill in while listening
- Show the teacher how to download an application that can scan the QR codes from a mobile device and try the sample activity.

Implementing the QR Audio Activity

- Provide the teacher with the template for the suggested activity and work through the steps of building the activity for the students, including copying/pasting/resizing the QR codes to the correct area.
- Explain some possible ways to differentiate the activities for the different ability levels in the class (for example, adding a word bank to the Cloze activity).
- Explain the options for ways to use the activities as homework (if enough students own and can use mobile devices) or as class activities with a full class set of mobile devices, a partial set, or a single mobile device (which the researcher can provide, if needed)
- Ask the teacher if there are any questions about how to implement the audio QR code activity, or if the researcher should help the teacher start to create one of the options

Conclusion

- Provide contact information and offer to provide technical support either via distance or an in-person visit to finish creating the materials for the QR code activity
- Remind the teacher to please complete the activity within the next month and to save a copy of any materials provided to the students.
- Ask the teacher if it is acceptable to initiate contact after two weeks and (if needed) four weeks to discuss the trail implementation.
- Thank the teacher for participating in the study

Appendix C: Activity Option 1: QR Code Listening Comprehension Activity

Options

Procedure: Turn each part of a dialog into a QR audio code and supply a worksheet as below: Students scan and practice the dialogue outside of class and then perform the next day. Another possibility is to make one recording of the whole conversation and have students practice or transcribe into a table.

Instructions: Listen to the conversation by scanning the QR codes. Practice speaking the phrases and translate them into English in the last column.

Scan and Listen	Person	Spanish	English
	Sara	'Buenas noches. Me llamo Sara. ¿Cómo te llamas?'	
	Carolina	'Hola Sara. Me llamo Carolina. ¿Cómo estás?'	
	Sara	'¡Muy bien! ¿Cómo estás tú?'	
	Carolina	'Muy mal. Sara, yo soy de México. ¿De dónde eres tú?'	

Appendix C: Activity Option 2: QR Audio Codes with Scrambled Stories

Procedure

Take a simple story, news article, or dialogue in the target language and split it into shorter sections. Make an audio recording for each section into Vocaroo and copy the QR code to a master sheet. Some possible options to work with the created QR codes:

1. Give each student a QR code that has a section of the text to transcribe and translate for homework. Later in the class or the next day, have the students put the story in order, check the language use, and perform or report it.
2. Give students a QR code of the whole story and complete exercises either in the target language or with an English translation.
3. Give each student a QR audio recording of the story and a scrambled transcription and have the students number the sentences in the correct order.

Example

This is a simple version of Aesop’s “The Lion and the Mouse.” Following the story are the first three sentences converted into audio QR codes using Vocaroo, an app, or a digital voice recorder.

El León y el Ratón

Después de un arduo día de caza, el León se echó a dormir debajo de un árbol, un ratón travieso que andaba por allí empezó a jugar en sumelena. El león despertó rápidamente y atrapó al ratón entre sus garras; y estando a punto de ser devorado el ratón le pidió que le perdonara, prometiéndole pagarle cumplidamente llegado el momento oportuno. El león echó a reír y lo dejó marchar.

Pocos días después, unos cazadores apresaron al majestuoso león y le ataron con una cuerda a un frondoso árbol. Pasó por ahí el ratoncito, quien al oír los lamentos del león, rápidamente corrió al lugar y empezó a roer la cuerda hasta dejarlo libre. Días atrás -le dijo-, te burlaste de mí pensando que nada podría hacer por tí en agradecimiento. Ahora es bueno que sepas que los pequeños ratones somos agradecidos y cumplidos.

El león no tuvo palabras para dar su profunda gratitud al pequeño ratón. Desde ese día fueron amigos para siempre.

<p>Pocos días después, unos cazadores apresaron al majestuoso león y le ataron con una cuerda a un frondoso árbol.</p>		<p>Pasó por ahí el ratoncito, quien al oír los lamentos del león, rápidamente corrió al lugar y empezó a roer la cuerda hasta dejarlo libre.</p>	
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Appendix C: Activity Option 3: QR Code Cloze Activity

Procedure: Provide students with one or more audio QR codes and a passage (as in the example below) with blank lines in the place of certain words. Students listen to the QR codes and fill in the words. Teachers may differentiate the activity by choosing to provide a word bank containing some or all of the missing vocabulary.

Instructions: Scan each QR code to listen to the sentence or part of a sentence. You may scan and listen to the code as many times as you want. Fill in the blanks with the words that you hear. (Optional: Use the words from Word Bank below).

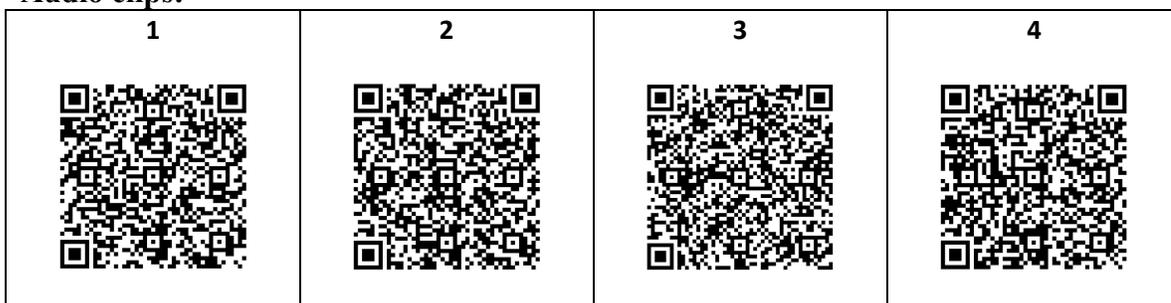
El León y el Ratón

(1) Después de un _____ día de caza, el _____. (2) se echó a dormir debajo de un _____, un ratón travieso que andaba por allí empezó a jugar en su melena. (3) El león despertó _____, y atrapó al ratón entre sus garras: (4) etc.

Word Bank (optional):

león -- rápidamente -- árbol -- arduo

Audio clips:



Appendix D: Quick Response Code Resources

Creating Audio

Vocaroo - <http://vocaroo.com/>

Create audio sources and either download or link to via QR code. The audio resource will play when the QR code is scanned on a mobile device.

QR Voice - <http://qrvoice.net/>

Type in a word or phrase in the FL, then choose the correct FL and generate the QR code. When scanned the audio should play in Google Translate.

Mp3 Applications

Many free options from Android (Hi_Q MP3 Voice Recorder, Smart MP3 Recorder) or Apple (QuickVoice Recorder, Voice Recorder by TapMedia). Records in several formats and many apps have easy sharing to Dropbox or e-mail.

Digital Voice Recorder

Sony has nice options between \$30 – \$50. Easy connection via USB to download .mp3 files to your computer for sharing. Excellent voice quality.

Creating QR Codes

Vocaroo and **QR Voice** above create the code along with the hosted audio content.

Kaywa - <http://qrcode.kaywa.com/>

Create QR code to link to URL, or many other options (text-only message does not even need Internet).

Padlet – <http://padlet.com>

Use this virtual wall to host audio content by uploading .mp3 files to the ‘wall’ and using the QR generator in the Share area to make a code that will allow students to play audio right from the wall. This is a good option for teachers with no web site or web sites that don’t host audio files.

Apps Scanning QR Codes

There are many free apps for scanning QR codes – a couple that might work:

- QR Code Reader from Kaywa
- QR Code Reader and Scanner by ShopSavvy

E-mail me with questions any time – (email address provided)

Appendix E: Questions for the Teachers after Formative Trial of QR Activity

1. Please explain exactly how you used the QR codes for instruction/support.
2. Can you provide samples of the materials, directions/instructions, etc. that you distributed to the students during your trial of the QR codes?
3. How easy or difficult was it for you to construct and distribute the needed materials for this QR code audio activity? How much time did the preparation take?
4. Would you like to review any part of the training on how to create and host audio files, or create and distribute the QR codes?
5. Were there any technical difficulties or problems with accessing or using technology that made this activity challenging to complete for the students?
6. Did you receive any feedback from students about the QR homework or classwork assignments?
7. Were there students who were not able to complete the QR audio activity? If yes, how did you make accommodations for them to learn the same material?
8. Do you see any evidence that the audio supports delivered by QR codes had a positive impact on student learning?
9. Are there any changes that you would like to make in the design of the activity for the final implementation?
10. Do you have additional comments to add?

Appendix F: Interview Questions after Final Implementation

1. Please explain exactly how you used the QR codes for instruction/support?
2. Can you provide samples of the materials, directions/instructions, etc. that you provided to the students during your final implementation of the QR codes?
3. How does the method of creating and providing the QR audio codes compare to your previous methods of providing content in terms of time necessary to create the codes and technical expertise required?
4. Did you receive any feedback from students about the QR homework assignments? Did you receive any feedback from parents?
5. Were there students who were not able to complete the QR audio activity? If yes, how did you make accommodations for them to learn the same material?
6. Do you see any evidence that the audio supports delivered by QR codes had a positive impact on student learning and/or helping students meet your stated learning objectives for listening comprehension?
7. Are there any barriers that would make this method of providing audio support to your students not feasible to use as a regular part of your teaching?
8. How effective do you feel the customized professional development training was in comparison with ways in which you have previously learned new educational technologies?
9. How likely is it that you will use this or one of the other possible QR audio activities with your students again?
10. Do you have any additional comments to add or ideas for improvements on the activities?

Appendix G: Formative Trial Audio QR Materials

TEACHER 1: Formative

La Ropa

QR Code Listening Activity #1

https://www.georgiastandards.org/Frameworks/GSO%20Frameworks/SP1_Unit_8_Stores-Shopping-Clothing_Plan.pdf

AUDIO TEXT:

¡Hola clase! Me llamo Marcela y soy una estudiante de un colegio en Segovia, España. Tengo 16 años. Hoy llevo una falda con muchos colores. Es de algodón y tiene flores azules, verdes y amarillas. Con esta falda llevo una blusa azul con mangas largas. La blusa tiene 4 botones. Llevo sandalias azules de cuero. Me gustan mucho las joyas y llevo muchas. Hoy, llevo un collar pequeño de plata con un diamante en el centro. También llevo 2 anillos grandes de plata y una pulsera de oro. Todos los días me pongo mi reloj que llevo en la muñeca izquierda.

Me gusta mucho la ropa en la tienda nueva en el centro comercial. Yo pienso comprar unos pantalones negros de lana con rayas blancas. Los pantalones cuestan veinte dolares. ¡Es una ganga! También quiero una blusa morada de seda que cuesta treinta dolares. Es un poco cara pero es muy bonita.

Nombre: _____

Fecha: _____

STUDENT TEXT:

- *Scan the QR Code to listen to audio recording.*
- *Fill in the blanks with the words you hear in the audio.*
- *Translate all to English*

¡Hola clase! Me llamo Marcela y soy una estudiante de un _____ en Segovia, España. Tengo 16 años. Hoy _____ una falda con muchos colores. Es de algodón y tiene flores azules, verdes y _____. Con esta _____, llevo una _____ azul con mangas largas. La blusa tiene 4 botones. Llevo _____ azules de cuero. _____ gustan mucho las joyas y llevo muchas. Hoy, llevo un _____ pequeño de plata con un diamante _____. También llevo 2 anillos grandes _____ y una _____ de oro. Todos los días me pongo mi _____ que llevo en la muñeca izquierda.

Me gusta mucho _____ en la tienda nueva en el centro comercial. Yo _____ comprar unos pantalones _____ de _____ con rayas blancas. Los pantalones _____ veinte dolares. ¡Es una ganga! También quiero una blusa morada _____ que cuesta _____ dolares. Es un poco _____ pero es muy _____.



TEACHER 2: Formative (A)

Nombre
La Fecha

Socializing 101
Teacher 2

Listen to the conversation by scanning the QR codes. Practice repeating the question aloud.
Match and write the question in Spanish and then write a response to each question in Spanish.

Scan and Listen			
Match the right phrase to the QR CODE from bank below.			
Write the correct response in Spanish.			
Scan and Listen			
Match the right phrase to the QR CODE from bank below			
Write the correct response in Spanish.			
<u>WORD BANK</u>	¿Cómo te llamas?	¿De dónde eres tú?	¿Cuál es tu nacionalidad?
	¡Hola! ¿Cómo estás?	¿Cuántos años tienes tú?	¿Qué vas a hacer durante el verano?

TEACHER 2: Formative (B)

Nombre
La Fecha

Socializing 101
Teacher 2

Listen to the conversation by scanning the QR codes. Practice speaking the question two times, write the question in Spanish and then write a response to each question in Spanish.

Scan and Listen	Repeat 1st time	Repeat 2nd	Write what you heard in Spanish	Answer the question in Spanish in a full sentence.
	<input type="checkbox"/>	<input type="checkbox"/>	¿Cómo te llamas?	Me llamo Srta. Hunt. ¿Y tú?
	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>		

TEACHER 3: Formative

Nombre _____

La fecha _____

Instructions: Scan the QR code and listen to the line of dialogue. Write down what you hear in Spanish and then translate that sentence to English.

Scan and Listen	Person	Spanish	English
	Sara		
	Carolina		
	Sara		
	Carolina		
	Sara		

TEACHER 4: Formative

“Laura y las comidas típicas de su país”

Scan the QR code on your device and watch the video. After you listen to the video, complete the following activities. Watch the video as many times as you need in order to complete the following. If you don't have a device with a QR scanner app, go to this website:

<http://placeholderwebsite.edu>

**Complete the following based on what you hear in the video:**

Hola me llamo Laura y _____ de España. Mi pregunta es: habla de _____ de tu país. Mi país, España, las comidas más típicas son la paella que se hace con _____ y marisco o con _____; el gazpacho que es _____ que se toma sobre todo en _____ y está hecha principalmente de _____; ¡está riquísima! Algo más... algo típico también son las tortillas de _____ que está hecha, como bien dice su nombre, de patatas, _____ y _____ ¡y es riquísima! Lo vas a encontrar siempre en España. Y aquí en mi _____, por ejemplo, es muy típico el pescado: las sardinas, los _____, etc. ¿Y tú? ¿En tu país cómo... qué coméis?

Translate the following:

Paella | “La paella es un plato típico español.”

Marisco | “Soy alérgico al marisco.”

Gazpacho | “El gazpacho se prepara con tomate, pimiento y pepino.”

Principalmente | “Los ingredientes principales de la paella son el arroz y el pollo.”

Tortilla | “¡Mi madre hace la mejor tortilla de patatas del mundo!”

Huevo | “¿Puedes comprar una docena de huevos en el supermercado?”

Pescado | “Me gusta comprar pescado fresco en el mercado.”

Nombre _____

Fecha _____

“¿Qué desayunas?”

QR Placeholder Scan the QR code on your device and watch the video. After you listen to the video, complete the following activities. Watch the video as many times as you need in order to complete the following. If you don't have a device with a QR scanner app, go to this website: <http://placeholderwebsite.edu>

Complete the following based on what you hear in the video:



Hola _____ Laura y soy de _____.

Mi _____ es: ¿qué desayunas? A mí _____

desayunar un _____ típico español, la verdad. Un _____ y

hacerme unas tostadas con _____ con _____ y un poquito

de jamón serrano. Eso es _____ que puedo, _____. Y

cuando tengo mucha _____, hay veces que sólo _____ tomarme

una tostada rápida con _____ o hay veces que me tomo un café y me salgo

corriendo porque _____ pero cuando puedo me siento y tranquila me lo

preparo. ¿_____?

Translate the following sentences:

Desayunar | “Me encanta desayunar en mi casa.”

Típico | “La comida típica española es la paella.”

Tostadas | “Me gustan las tostadas con mantequilla.”

Jamón serrano | “Los españoles comen mucho jamón serrano.”

Café | “Hay veces que tomo té, pero la verdad es que prefiero tomarme un café en vez de té.”

TEACHER 5: Formative**El Clima**

- | | |
|------------------------------|----------------------|
| 1. La temperatura= | The temperature |
| El grado= | Degree |
| 2. Hace sol= | It's sunny |
| 3. Hace calor= | It's hot |
| 4. Hace buen tiempo= | The weather is nice |
| 5. Hace mal tiempo= | The weather is awful |
| 6. Hace frío= | It's cold |
| 7. Hace viento= | It's windy |
| 8. Hace fresco= | It's cool |
| 9. Lluve= | It rains |
| 10. Nieva= | Snows |
| 11. Está helado= | it's freezing |
| 12. Está nublado= | It's cloudy |
| 13. Está frío= | is cold |
| 14. Está despejado= | It's clear |
| 15. Está nevando= | It's snowing |
| 16. La lluvia= | The rain |
| 17. El sol= | The sun |
| 18. El granizo= | Hail |
| 19. El relámpago= | Lightning |
| 20. El trueno= | Thunder |
| 21. La niebla= | Fog |
| 22. El copo de nieve= | Snowflake |
| 23. La nube= | Cloud |
| 24. Ola de calor= | Heat wave |
| 25. El cielo= | The sky |



Diálogo 6

1. Cuando necesito comer voy a _____ (cafeteria)
2. Cuando _____ voy a la biblioteca.
3. Cuando _____ usar el teléfono _____ a la _____ (office)
4. Cuando quiero hablar con la maestra de español voy a la _____ (class)
5. Cuando _____ hacer ejercicio yo _____ (gym)
6. Cuando quiero _____ mi carro voy al _____ (parking lot)
7. Cuando quiero _____ yo voy a la _____ (track)
8. Cuando _____ jugar fútbol yo voy al _____ (field)
9. C _____ quiero ver una presentación voy al _____ (auditorium)
10. Cuando necesito _____ voy a la _____ (nurse's office)

Preguntas Diálogo 6

1. ¿Adónde vas cuando necesitas comer?
2. ¿Adónde vas cuando quieres leer un libro?
3. ¿Adónde vas cuando necesitas hablar por teléfono?
4. ¿Adónde vas cuando quieres hablar con la maestra de español?
5. ¿Adónde vas cuando quieres hacer ejercicios?
6. ¿A dónde vas cuando quieres parquear el auto?
7. ¿A dónde vas cuando quieres correr?
8. ¿A dónde vas cuando quieres jugar fútbol?
9. ¿A dónde vas cuando quieres ver una presentación?
10. ¿A dónde vas cuando quieres descansar?



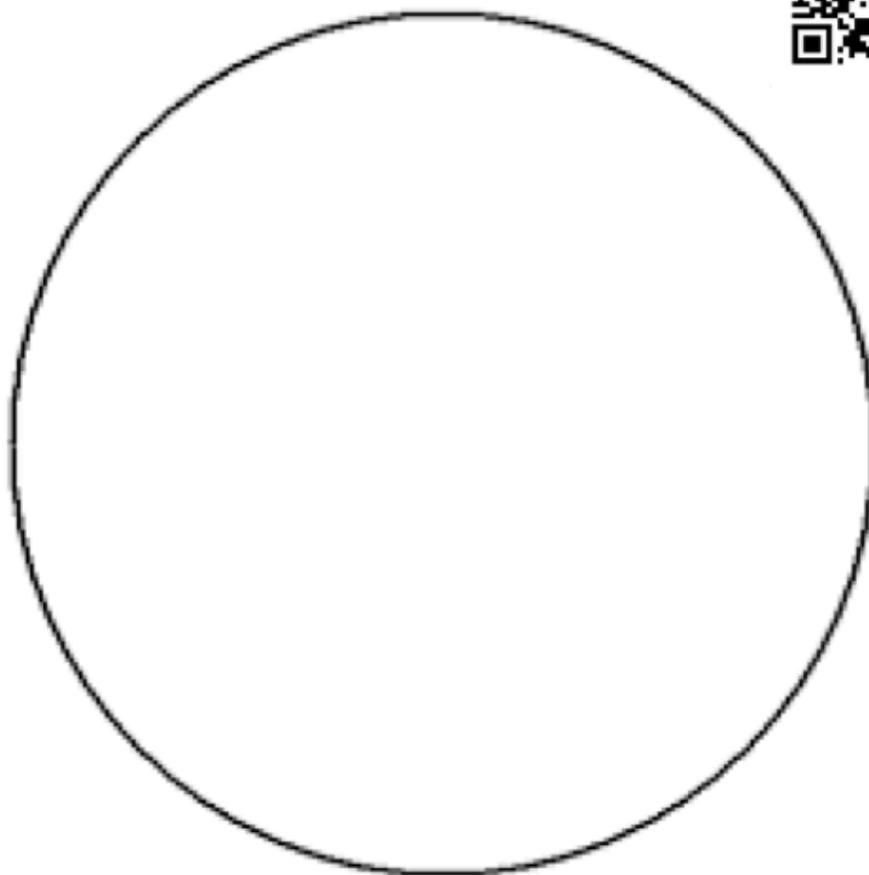
TEACHER 6: Formative

Español
Código QR
El Extraterrestre

Me llamo _____

Fecha _____

Complete Ud. el dibujo según la información que escuches.



TEACHER 7: Formative

Nombre: _____

For this assignment you will need to download the *QR code reader* app(free) on your android or apple device to scan the codes.



A: Scan the QR code above, write the number you hear in number form.

1. _____

6. _____

2. _____

7. _____

3. _____

8. _____

4. _____

9. _____

5. _____

10. _____



Scan the QR code above. As you hear the prices of the clothing items write the price next to the item in number form. *Listen carefully to the currency and write the correct symbol, dollars= \$ mexican pesos= \$ or euros=€.
**Dollar and peso symbols come before the number, the euro symbol comes after.









TEACHER 8: Formative

Nombre _____
Teacher 8

La fecha _____
Listening Assignment

Instrucciones:

- 1) Download the **Kaywa** app on a smartphone. The icon looks like this (except it is light blue): 
- 2) **Scan** the QR Code below using the Kaywa app.
- 3) **Listen** to the audio file.
- 4) **Write** what you hear on the lines below. You may listen to the audio file as many times as necessary.

5) **Answer** the questions that follow in complete sentences in Spanish. Question A has more than one correct response. You may listen to the audio file as many times as necessary.

- A) ¿Qué hace Jorge? _____
- B) ¿Qué enseña el maestro? _____
- C) ¿Cómo se llama el amigo de Jorge? _____

QR CODE:



TEACHER 9/10: Formative

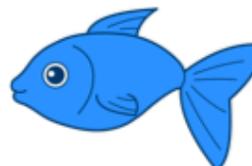
QR CODE Homework

Direcciones: Scan each QR code and listen to what foods are being described. Then, circle the food that is being discussed. You may listen to the QR code as many times as you need

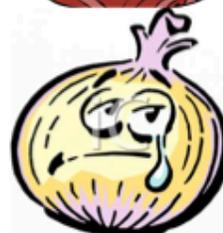
1.



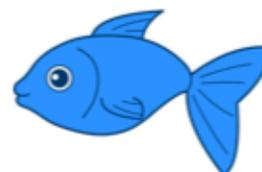
2.



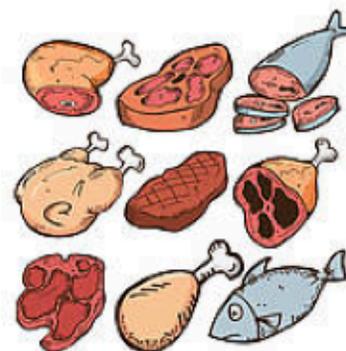
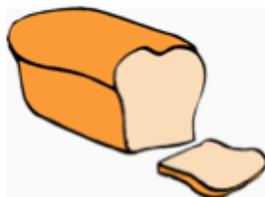
3.



4.



5.



6.



TEACHER 11: Formative

Español 8
Las Películas/QR code Assignment

Nombre: _____

Scan each QR code to hear a description of what different people like. Based on what you hear write the type of TV show they would enjoy watching.











En El Cine: Un Diálogo

Scan the QR code below to hear a dialogue about a trip to the movies. Then answer the questions that follow in English based on what you heard.



1. What types of movies does Elena like?
2. What types does Paco like?
3. What is the problem they are having, and how do they resolve it?
4. What does Elena buy at the movie theater?
5. What does Paco buy?

Appendix H: Final Trial Audio QR Materials

TEACHER 1: Final

Nombre: _____ Periodo _____ Fecha: _____

QR Code - Speaking, Listening & Writing Review for Final

- Select one of 10 QR codes posted in classroom.
- Scan code
- Listen to audio using your ear buds.
- Copy the questions you hear in Spanish here.
- Answer the questions in Spanish. Remember to add details, (adjectives and prepositions where possible).

1. Pregunta: _____

Respuesta: _____

2. Pregunta: _____

Respuesta: _____

3. Pregunta: _____

Respuesta: _____

4. Pregunta: _____

Respuesta: _____

5. Pregunta: _____

Respuesta: _____

Ask me 2 questions in Spanish relating to this conversation:

1. _____

2. _____

QR Codes

Las Preguntas para el Examen Final



- Download a free QR Code Reader app from app store or googleplay to your cell phone.
- Scan each code
- You will hear my voice in English first telling you which scenario you scanned.
- I will ask questions in Spanish relating to this scenario
- Listen to questions and answer all in Spanish.

PI Note: There were 10 of these sheets, each with a different QR code

TEACHER 2: Final

5/25/2016 Listening 2006 - Google Docs

Listening Comprehension Practice Exam 2006
Scan QR code below for Questions 1 and 2



Scan QR code below for Questions 3 - 7



Scan QR code below for Questions 8-10



PI Note: There was an additional sheet of QR Codes for more questions.

TEACHER 3: Final

2nd activity

Nombre _____ **La fecha** _____

Instructions: Scan the QR code and listen to the line of dialogue. The Spanish transcript is filled in for you. Translate each line to English.

Scan and Listen	Person	Spanish	English
	Sara	¡Hola Carolina! ¿Qué <u>haces</u> hoy?	
	Carolina	Hoy voy al centro comercial para comprar la ropa.	
	Sara	¿Qué vas a comprar?	
	Carolina	Yo <u>necesito un traje de baño nuevo</u> porque yo voy a la playa este fin de semana.	
	Sara	¡Excelente! ¡Que te <u>diviertas!</u>	

Teacher 3 Final Materials

Instructions: Scan the QR code and listen to the line of dialogue. Write down what you hear in Spanish and then translate that sentence to English.

Scan and Listen	Person	Spanish	English
	Sara		
	Carolina		
	Sara		
	Carolina		
	Sara		

TEACHER 4: Final

Nombre _____

Fecha _____

Scan the QR code on your device and watch the video. While you listen to the video, complete the paragraph using the words and phrases provided in the box below. Replay the video as needed. If you don't have a device with a QR scanner app, go to the website directly. (You must use capital and lower case letters exactly as shown!)

"¿Cómo vas al trabajo o a la escuela?": <https://goo.gl/qM65Ez>



Hola, ¿_____? Soy Jesús de Perú, y la pregunta es: ¿Cómo vas al trabajo o a la _____? Yo _____ me levanto muy temprano para ir al _____ y a la escuela, puesto que _____ en la _____ y trabajo en mi misma universidad. Salgo _____ y tomo una combi, que es el _____, es el bus aquí en Perú. Por suerte la universidad está _____ mi casa, entonces me demoro muy poco en _____. Podría hacerlo en _____, algunas veces lo hago, pero usualmente lo hago _____ el servicio público. Gracias.

tomando	temprano	estudio	servicio público	cerca de	qué tal	escuela
bicicleta		universidad	usualmente	llegar		trabajo

"¿Cómo es tu ciudad?" <https://goo.gl/MeKXYc>



Hola, _____ Julián, soy de Colombia. La _____ es: ¿Cómo es tu ciudad? _____, mi ciudad es _____, es la más grande de mi país, puesto que es la capital de éste. Mi ciudad tiene un _____ masivo, llamado Transmilenio, y en el que... el cual es el medio de transporte más _____ de ésta. Entonces _____ se basan en el mismo ¿no? Tiene un _____, tiene un coliseo cubierto, una _____, tiene muchos _____, hay muchas cosas que hacer en esta _____, hay muchos proyectos en desarrollo, y _____ es una ciudad en la que nunca _____. Gracias.

museos	grande ciudad soy	pregunta	importante	bueno	te aburres
sistema de transporte	plaza de toros	estadio de fútbol	en general	muchas cosas	

TEACHER 5: Final

Empanadas Ecuatorianas

Escuche el video de las empanadas Ecuatorianas y responda a las siguientes preguntas.

1. ¿Qué ingredientes necesitas para hacer empanadas Ecuatorianas?

2. ¿Qué utensilios necesitas?

3. ¿Cuales son los pasos para la preparación de las empanadas?

4. ¿A qué temperatura hay que freír las empanadas?



TEACHER 6: Final

Me llamo



1. Scan
2. Listen to the story
3. Fill in the blanks (¡en español!) to complete the story.
4. Answer the questions on the back of this paper.

Hay una _____ de ratoncitos. En la familia hay una ratoncita y _____ ratoncitos.

Un día, _____ buen tiempo. Hace sol y no hace _____ calor. La familia de ratoncitos _____ al parque. En el parque, la mamá se sienta y _____ a los hermanos. Los hermanos _____ en el parque. Ellos _____ al béisbol. Ellos _____ al fútbol. Ellos _____ y se divierten en el parque.

¡Hay un problema! ¡O no! ¡O no! Un gato _____ en el parque. El gato _____ hambre. El gato no _____ sed, _____ mucha hambre. ¡Al gato le _____ comer ratoncitos! Los ratoncitos _____ el gato. Ellos _____ a la madre. Ellos le _____, -¡Mamá! ¡Mamá! ¡El gato! ¡El gato!

La madre de los tres ratoncitos se levanta y _____ al gato. La mamá le _____ al gato. Ella le _____, -¡Guau! ¡Guau! El gato _____ del parque. La madre dice, -Es buena idea _____ dos lenguas.

TEACHER 7: Final

Nombre: _____

For this assignment you will need to download the *QR code reader* app(free) on your android or apple device to scan the codes.



Scan the code above and **circle** which item of clothing each person prefers based on what you hear. Remember, the LARGER picture is CLOSER(this/these) the SMALLER picture is FARTHER away(that/those).

Sonia



Jorge



Enrique



Laura



Ana



Sofia



Beto



TEACHER 8: Final

Nombre _____
Teacher 8

La fecha _____
Listening Assignment

Instrucciones:

- 1) Download the **Kaywa** app on a smartphone. The icon looks like this (except it is



- 2) **Scan** the QR Code below using the Kaywa app.
3) **Listen** to the audio file by clicking on the black play triangle within the grey area.
4) **Answer** the questions that follow in *complete sentences* in Spanish. You may listen to the audio file as many times as necessary.

A) ¿Qué le encanta hacer Srta. Teacher 8?

B) ¿Qué es el restaurante favorito de Srta. Teacher 8?

C) ¿De dónde es la comida del restaurante?

D) ¿Qué tipo de comida usa Srta. Teacher 8?



TEACHERS 9/10: Final

Nombre: _____
Español 6Fecha: _____
Realidades 3B**QR Code Homework 2**

Parte 1: Scan the QR codes to listen to statements about foods/ activities. Then, write the food or activity described on the line and write if the statement was true, "cierto," or false, "falso."

Ejemplo: las verdurascierto

1. _____



2. _____



3. _____



4. _____



5. _____



6. _____



Parte 2: Write three sentences describing three activities that were not discussed in the QR codes that are good for your health, en Español.

1. _____

2. _____

3. _____

TEACHER 11: Final

Español 8

Listening for Final: QR codes

Nombre: _____

Scan the QR code to hear a passage in Spanish. Then answer the multiple choice question on your paper that goes with the passage. You may listen as many times as you need to.



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