

QR CODES IN THE CLASSROOM: EFFECTIVE STRATEGIES FOR FOSTERING A DYNAMIC LEARNING ENVIRONMENT

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ABSTRACT

As the world becomes increasingly reliant on technology, Quick Response (QR) codes have risen in popularity across a variety of sectors due to their ability to provide complex data in a basic two-dimensional image. Within the educational sector, QR codes represent one facet of mobile learning that can amplify the learning environment and expose students to dynamic and authentic input. Furthermore, QR codes yield a strong potential for encouraging student engagement while effectively promoting acquisition of target language objectives. This article illustrates practical pedagogical applications of QR codes in a second language classroom across three major areas: tailor-made input, collaborative efforts, and gamification. Various considerations for implementation are discussed.

INTRODUCTION

Created in the early 90s, Quick Response (QR) codes are utilized to express complex data in a finite, compact form. They offer a relatively low technology barrier which makes them ideal for transmitting information in a variety of venues. Users need to simply scan the code using the camera on their phone, and the code will redirect them to a source. In recent years, these codes have become increasingly popular in marketing, business, and even the dining industry. QR codes have additionally begun to gain popularity within the educational sector as a facet of

mobile learning. These codes are extremely versatile and can link students to images, audios, videos, webpages, documents, and more while catering to a wide range of learning preferences (“How QR Codes Permit Access,” 2017). Additionally, they enable the learning sphere to be amplified beyond the classroom encompassing both the outdoor and virtual world (Lai et al., 2013; Law & So, 2010). Researchers have discovered that QR codes can make content courses such as math and science more dynamic and engaging for students (Leahy, 2013). Within the field of second language acquisition (SLA), QR codes have been applied for specific skills such as vocabulary development (Liu & Leveridge, 2017) and enhancing aural comprehension (So, 2011). When implemented correctly, these QR codes can foster an active learning environment that promotes student engagement and the acquisition of specific language skills. This article exemplifies several practical applications of QR codes within an SLA environment including strategies to diversify input, promote collaboration, and gamify lessons.

PEDAGOGICAL APPLICATIONS

Diversify Student Input

Student engagement has been regarded as a vital element in the classroom (Christenson et al., 2012) and is an integral part of building awareness with a target language (Hiver et al., 2021; Philp & Duchesne, 2016). To promote student engagement through decision making, QR codes can be used to distribute a wider range of textual input within the classroom. For example, instead of having students watch the same video on how Coca-Cola is made to highlight the passive voice, create different options using QR codes. Thus, students can choose from a series of videos which feature similar language targets yet have different contexts. While teachers can print off different texts, it is more complex to distribute videos or audios to each student. In this

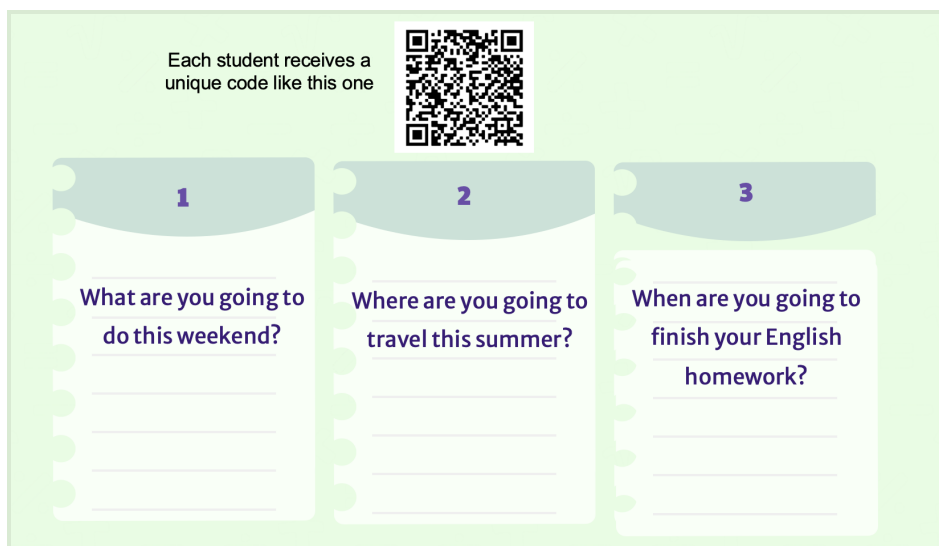
way, QR codes are particularly effective in presenting options that might be otherwise challenging to provide due to classroom constraints. Not only do these options enable students to have a more active role in their learning process, they also foster a natural space for ‘reporting,’ where students can discuss content and findings from their input with students who chose different texts, thus exemplifying the communicative approach to language acquisition.

Therefore, by setting up a series of QR codes around the classroom (or breakout rooms in an online environment), you may provide access to different articles, videos, and audio input to promote student choice and cultivate an active learning environment.


To further promote student participation, consider using QR codes for unique input tasks. Often in classroom settings participation can be dominated by a few students. By giving each student their own code (with unique input), more holistic participation can be achieved. For example, consider providing a warmup such as the one below. There are three questions and each student receives a QR code that links to an audio that answers *one* of those questions. Students will listen to their unique audio and move to the question that corresponds with their answer.

Figure 1

Sample Warmup Task Facilitated Using QR Codes



Each student receives a unique code like this one



- 1
What are you going to do this weekend?

- 2
Where are you going to travel this summer?

- 3
When are you going to finish your English homework?

This application offers ample opportunities for student participation and engagement within the classroom. For more advanced levels, you can provide students with different input to help shape classroom debates/conversations. Essentially, the range of input provides students with opportunities to engage in ‘information gap’ activities, which are a core pillar of the communicative approach. These information gap tasks promote authentic exchange of information among students in a productive manner (Canale & Swain, 1980; Tan, 2005; Richards, 2005). For example, before debating the pros and cons of social media use among teens, students can be given a range of short opinion texts via QR codes to prime them for the debate. Each student pairing knows that the information they receive is unique to their group and that they are responsible for integrating that perspective into the debate.

Finally, to further encourage active learning, QR codes can help combat the challenges of different skill sets which are typically seen in multilingual classrooms. For years, L2 instructors have been encouraged to create leveled tasks to cater to diverse student populations (Bell, 2004; Roberts, 2007). The implementation of QR codes can promote ease of delivery of different texts to students to ensure they are being challenged appropriately in circumstances where the process is more important than the text itself (e.g., genre analysis, observing grammar in context). To differentiate tasks, consider using QR codes to distribute links to videos of different speeds, with or without subtitles, or texts of different length/lexical complexity.

Collaborations/Displays

Kearney et al. (2012) promotes a framework for mobile learning centered around authenticity, collaboration, and personalization. As a facet of mobile learning, QR codes highlight these three pillars within collaborative tasks. As the purpose of QR codes is to store and share information in a compact point, they become ideal for sharing and distributing student

collaborations. Instead of trying to compile a bound book of student short stories, consider creating a short ‘about the author’ bio for each of your students, and provide a QR code to their story. This way, students have access to their peers’ texts in a fast and compact manner.

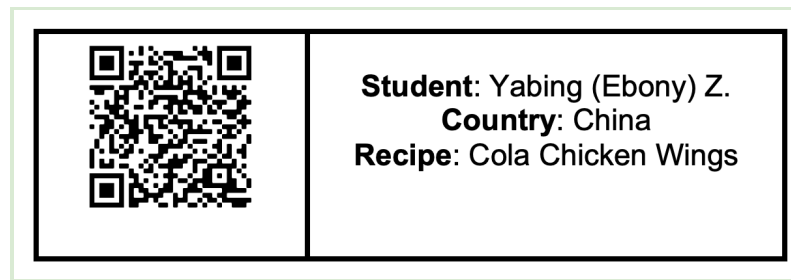
Additionally, this can even help create collaborations across courses/levels. In the past, we have created an ‘international cookbook’ with entries from students from each level. Our lower-level students created short PowerPoint presentations with pictures and basic instructions.

Intermediate students created blog posts that combined longer texts with images and/or videos.

Our advanced learners worked in small groups to produce vlog-style tutorials about their favorite recipes. At the end, we stored each entry as a QR code so that each student could walk away with access to all the recipes. Below is a sample from one of the intermediate student’s entries to our recipe book.

Figure 2

Sample excerpt from student recipe book



In addition to fostering collaboration among L2 learners, QR codes can be effective in promoting cross-cultural exchanges. Integrate QR codes into posters/displays during student orientation, international week, Lunar New Year, etc., to help engage domestic students in learning about their international peers. On a large map, provide QR codes near each country/region where students are from. These codes can link to a myriad of dynamic and interesting links, including (yet not limited to) travel recommendations, YouTube playlists of

local music, short videos, or even student-prepared texts/audios/videos about the area. Setting up your interactive station with games and prizes can help cultivate cross-cultural interactions and promote natural exchanges in a simple, fast, and dynamic manner.

Figure 3

Sample representation of global display



These examples represent authentic, personalized student content born out of collaborations honoring the constructs of successful mobile learning pedagogy outlined in Kearney et al. (2012).

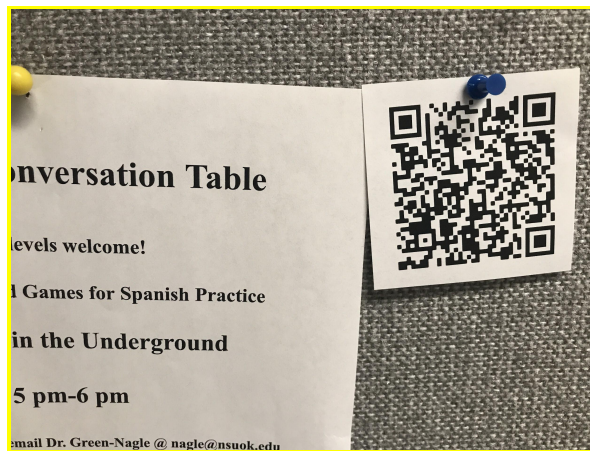
Gamification

In recent years, gamification has become popular as an effective and engaging pedagogical tool. Within the field of SLA, gamification of classroom material has been associated with a higher level of student motivation and engagement (Bouldadi & Gutierrez-Colon, 2020) and produces a positive impact on the overall classroom experience (Flores, 2015). QR codes can promote gamification in a stimulating way. Many have utilized

these tools to build intricate interactive games or to participate in alternative reality gameplay (Berns et al., 2016). These applications, while intriguing, may be intimidating for some educators, yet there are a myriad of more simplistic QR applications that can be readily integrated into the classroom. For example, consider creating a ‘scavenger hunt’ around your school/campus with QR codes providing clues/prompts for their next spot. This can help promote student collaboration while acclimating them to important areas of their new environment. You can even have students create their own clues for scavenger hunts at the end of the semester to build production skills and to challenge their peers.

Figure 4

Sample Clue from Campus Scavenger Hunt



Beyond scavenger hunts, QR codes can be implemented in conjunction with other tactile materials to foster ‘escape rooms’ and team building exercises including role-playing mysteries, Simon Says, and more. Do not be intimidated by the concept; these tasks are fairly easy to prepare. Create a series of short puzzles that require specific language skills to solve. Then, utilize QR codes within the tasks to integrate audio/visual/textual input throughout the game. These are wildly popular with students and an exceptional device to review a large set of objectives while utilizing all four skill sets.

These codes can even be integrated into more traditional gaming systems. For example, you may customize certain ‘spaces’ on traditional board games to target your own classroom objectives. Instead of a simple ‘advance four spaces’ prompt, you may challenge students to ‘scan the code and fill in the blank with the appropriate vocabulary term to advance four spaces.’ These small modifications can help promote a more ‘tailor-made’ experience for your learners.

CONSIDERATIONS

As with any technological tool, a responsible educator must evaluate the accessibility of the tool itself. While most adults in many countries have cell phones, internet access and/or mobile data may vary based on student and location. Furthermore, when dealing with younger students, it may not be guaranteed that each student has a mobile device. Thus, it is imperative to ensure that students have access to both a cell phone and internet before implementing QR codes in your own classroom.

Additionally, it is the responsibility of the instructor to evaluate the *necessity* of their pedagogical practices. Bitner and Bitner (2002) assert that “learning should be the impetus that drives the use of technology in the school” (p. 97). While QR codes can be inviting and engaging, we need to ensure that they are being used to serve a specific pedagogical purpose. When overused or abused, their nuance may quickly fade for students. Thus, reserve the use of this tool for circumstances where the application of the QR code will enhance the learning experience.

Finally, as with any sound pedagogical practice, feedback should be sought from students surrounding the implementation of QR codes in the classroom. By allowing students to share

their opinions on these tools, we can better shape our practices to meet the needs as well as the desires of our students.

CONCLUSION

As the educational sector continues to encompass more mobile learning strategies, QR codes will become more relevant as pedagogical tools. QR codes are attractive for educators due to their versatile and engaging nature combined with a relatively low technology barrier. The use of QR codes within a language classroom can promote student engagement, an active learning environment, and tailor-made input while encouraging the acquisition of language skills. To ensure that these dynamic tools are successful and efficient in your own classroom, it is imperative to consider your students' technological access, the purpose of the QR code, and the student response to this feature.

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