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## QR Code Enriched Writing and Speaking Practices: Insights from EFL Learners at Tertiary Level

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### ABSTRACT

This study examined experiences and viewpoints of English as a Foreign Language (EFL) learners' regarding the integration of QR codes into writing and speaking practices at the tertiary-level L2 learning. Employing an action research design, researchers collected qualitative data through online interviews, a survey of open-ended questions, and learners' written reflections during class hours and brief field notes. Inductive thematic analysis was used for data analysis to form codes and themes. As a result, the learners identified QR codes as time-saving, useful, and enjoyable pedagogical tools for writing and speaking practices. The facilitative role of QR codes was centered on increasing motivation and interaction with classmates during different phases of productive skill-based activities, particularly in the idea-generation steps. The learners reported that QR code-based mobile learning practices make learning environments more participatory, safe, inclusive, and cooperative. The study presents instructional implications for transforming conventional student-teacher interaction into a peer-learning-oriented and autonomous atmosphere in higher education.

**Keywords:** action research; higher education; mobile learning; QR codes; writing and speaking practices

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### ARTICLE HISTORY

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## Introduction

The digital technologies have a significant effect on the use of language teaching and learning materials and the communication between teachers and learners. As a component of digital technologies, Mobile-based Language Learning (MALL) provides a variety of instructional opportunities and benefits (Gutiérrez-Colón et al., 2023; Yu et al., 2023) in several aspects. Specifically, it enables learners to access to language learning materials out of the classroom and provides a space for interactive and communicative language learning practices (Chung et al., 2019; Hwang & Chen, 2013). It also creates an engaging, authentic, and flexible atmosphere for English language learners (Gutiérrez-Colón et al., 2023).

Within the framework of the MALL, specifically, Quick Response Codes (QR codes) have significant effects on English language education. QR Codes are basically defined as “black modules arranged in a square pattern on a white background” (Durak et al., 2016, p. 45). They enable individuals to have access to a variety of sources including visuals, audio or videos, printed or electronic files, multilingual texts, URL links, and websites. They provide opportunity for learners to have quick access to language learning materials. They are effective tools for communicative and collaborative learning since they overcome the barriers between the traditional classroom setting and the real world (Thorne, 2016; Yu et al., 2023). Hence, QR codes can be used to create interest among students and enhance their motivation in English language classes (Bakla, 2018).

Recently, the pedagogical use of QR codes in language education contexts including skill-based courses has also gained popularity (e.g., Chen, 2022; Çelik, 2023; Durak et al., 2016; Kuru-Gönen & Zeybek, 2022). Previous research documented the positive impact of QR code-supported language instruction on reading comprehension (e.g. Kuru-Gönen & Zeybek, 2022). Further, it was found out that they enable the integration of authentic content in language classes (Thorne, 2016).

Considering the empirical evidence in the previous research, we need further insights into learner experiences in authentic classroom contexts to expand related pedagogical implications. This research addresses this need to extend research on enriching L2 learners’ active and collaborative participation in speaking and writing practices through mobile learning, specifically QR codes. As part of this action research, experiences and observations of researchers in the English language skill-based classrooms brought insights into this study. To address this underexplored area, this study aimed to examine L2 learners’ experiences with QR code-based activities in writing and speaking skills classes to enhance active participation and scaffolding of various phases of process genre-based writing and oral communication skills instruction. The present study can enable gaining an in-depth understanding of learners’ experiences and challenges and document their affordances in performing as an agent of change in L2 writing and speaking practices. This study aimed to highlight the experiences of L2 learners with QR code-enriched writing and speaking classes in authentic English language teaching classrooms.

## Literature Review

### *Mobile Technology and QR Codes*

Mobile technology can extend learning activities and “can be integrated with different kinds of emerging technologies such as virtual reality and robots” (Chung et al., 2019, p. 2). The usefulness of mobile learning has been largely addressed and documented in the previous studies on second language acquisition (e.g., Andujar, 2016; Chee & Tan, 2021; Kuru-Gönen & Zeybek, 2022; Li,

2023; Oberg & Daniels, 2013; Stockwell, 2010). Previous studies have shown that mobile devices are convenient tools for learners to complete a variety of tasks, particularly for activities that involve learning English within specific contextual limitations (Stockwell, 2010). They enable an active engagement in English language skills including enhancement of extensive listening and speaking (Sad et al., 2022).

Among other applications and means of mobile learning, QR codes have been recently used in the language learning and teaching processes in higher education (Çelik, 2023; Kuru-Gönen & Zeybek, 2022). They can be used at any stage of a learning process in lessons for a variety of teaching purposes such as to arouse interest and curiosity, to augment the use of images, interactive infographics and quizzes, to support autonomous learning, and institutional purposes such as avoiding copyright issues and reducing the amount of paper (e.g. Cruse & Brereton, 2018). Cruse and Brereton (2018, p. 346) suggest seven benefits for language teachers while designing QR-code-supported teaching materials:

- a) encouraging judicious use of QR codes,
- b) engaging learners, particularly in the lead-in part of the lesson with QR codes,
- c) promoting learner autonomy,
- d) facilitating the lesson flow,
- e) making material designing easier,
- f) adding value to materials through augmenting and linking to other resources,
- g) and encouraging the use of a variety of engaging contexts and authentic materials.

Considering that the use of media appealing to different senses including sight, touching, smelling, and hearing enhances learning, QR codes provide various digital sources appealing to senses and thereby can act like a bridge connecting the physical environment to the virtual world (Durak et al., 2016).

As a conceptual framework, the integration of QR-based activities into L2 writing and speaking skills was situated within the framework of Engagement Theory (Kearsley & Shneiderman, 1998). This framework focused on the important role of technology for meaningful engagements (Kearsley & Shneiderman, 1998). As part of this study, the principles of this framework were integrated in the instructional strategies during the 12-week of writing and speaking classes. Mainly, these classes included collaborative tasks, project-based activities, and authentic contexts accessed via QR codes. In this way, we aimed to form learning outcomes to use English in collaborative tasks, project-oriented learning activities. These tasks were used as part of interactive, authentic, and collaborative group activities.

### ***Earlier Studies on QR Codes in Language Education***

In the previous research showed that the use of QR codes serve several pedagogical benefits for practicing a variety of English language skills (Bakla, 2018; Chee & Tan, 2021; Chen, 2022; Durak et al., 2016; Hernando & Macías, 2023; Kuru-Gönen & Zeybek, 2022; Rivers, 2009). For example, Previous studies noted that the integration of QR codes facilitates technology acceptance (Hernando & Macías, 2023), and support active learning in language classrooms at the tertiary level (Duarte et al., 2018). Relatedly, QR codes were found to enhance learners' reading performance and increase their motivation (Liu et al., 2014). It was also revealed that collaborative listening activities supported by QR codes improved learners' listening performance and strategies (Liu et al., 2018). In a recent study, Kuru-Gönen and Zeybek (2022) examined EFL learners'

perceptions of authentic reading texts supported by QR codes. Overall, the findings revealed that such reading texts support their comprehension, boost motivation, foster retention, and help access information easily. Unfamiliar cultural content and technology access were found to be the basic barriers. Similarly, concentrating on learner perceptions in some studies, several authors demonstrated that QR-code-based activities were also perceived to make courses fun, unusual, and interesting (Rivers, 2009).

Apart from the aforementioned studies, Chee and Tan (2021) conducted a systematic review of the studies on integrating QR codes in language teaching and employing technology-based methods in teaching and learning pronunciation. The key benefits were encouraging students' motivation and drawing their interest in studying, which resulted in favorable learning attitudes among students. Lack of experience in using QR codes and limited internet access were the main barriers. Focusing on the views of language learners towards QR-code integration into learning, Durak et al., (2016) found that QR-based courses had a positive effect on learning. The Turkish learners found QR code-supported lessons useful and encouraging in terms of visuals, ease of use, and attractiveness. In terms of difficulties, the learners mentioned that the academic staff had a lack of knowledge on how to use QR codes. Different from the benefits and drawbacks, previous research has focused on the integration of QR codes into different language skills. For example, Bakla (2018) suggested that QR codes enrich teaching materials and are potentially more applicable in the reading and listening skills via inserting reading texts or listening materials, whereas they may be used to create activities in teaching writing and speaking skills.

To sum up, based on the few studies on the use of QR codes in language education, there is widespread use for several pedagogical purposes such as sharing visual or audio information about the content, exercises as well as their answers, providing feedback, and presenting the relevant topic covered and various related websites. Overall, these findings suggest that instructional uses of QR codes are useful for maximizing the variation in the activities or course content in the classroom by enriching the content. Acknowledging the previous research, there is still a lack of empirical evidence from the studies carried out as action research in an authentic classroom environment. The present research addressed this gap by examining experiences, challenges, and perceptions of L2 learners towards QR code-based activities as part of their speaking and writing practices. The study will provide empirical evidence in the context of action research within authentic language classrooms in higher education by highlighting learner responses based on real-world classroom scenarios and writing and speaking practices. These responses yield insights into learner experiences and the motivational aspects, contributing to instructional implications in higher education. The contribution of this research is reflected in the provision of empirical evidence based on a specific focus on writing and speaking practices.

Using an in-class integration of QR codes into L2 writing and speaking practices during one semester including 12 weeks, the current study aimed to shed light on the experiences, challenges, and perceptions of learners towards QR code-based activities through open-ended questions, semi-structured interviews, and written reflections. This investigation could provide further insights into the use of QR codes and their role as an agent of change in teaching and learning writing and speaking skills for language teachers, learners, material designers, and researchers. Accordingly, the following research questions were formulated:

- 1) What experiences do L2 learners have in the integration of QR codes into English writing and speaking practices?
- 2) How do the experiences of L2 learners impact their engagement and motivation in their writing and speaking practices in English?

## **Methodology**

### ***Research Setting and Participants***

Data for the current study were gathered as part of the writing and speaking skills courses delivered by the researchers. The participants of the study consisted of 61 L2 learners who responded to the survey. Upon the completion of this survey online, face-to-face semi-structured interviews were carried out with five participants.

The data were collected from learners aged between 18-21 at two state universities in Turkey during 2021-2022 fall and spring semesters. These learners were enrolled in the English Language Teaching program in higher education, which means that they chose teaching English as a profession for their future careers. In this respect, it is of utmost value for this group of learners to have digital competence as they are in a digital era. As prospective English language teachers, they are expected to keep up with the current needs of learners and changes in the digital world. As part of these innovative tools, they are expected to be aware of the recent applications such as QR codes in English language education.

### ***Research Design***

The current research was designed as collaborative action research. The underlying reason for this type of research was that during writing and speaking classes, we noticed that L2 learners were hesitant to participate in in-class activities for various reasons, such as fear of making mistakes, inadequate knowledge about assigned topics, and lack of motivation. Based on these observations, we followed the spiral-iterative cycle proposed by Burns (2019), which involved planning, taking an action, observing, and reflecting. The objective was to efficiently assemble information on the adequacy and fittingness of the activities taken, analyze the data, reflect on the suggestions of findings, and possibly create elective plans or activities based on this analysis and reflection (Burns, 2019). In this way, we aimed to uncover benefits, challenges, and further improvements to strengthen the exchange of theoretical issues and pedagogical ideas (Sato & Loewen, 2022). We utilized a survey of open-ended questions, semi-structured interviews, classroom documents, and brief field notes as primary data collection tools. Then, we merged the changes and improvements in practice with the findings from these tools.

### ***Procedures***

The data for the study came from two L2 writing and speaking classes held for 12 weeks. As part of the instructional context of this research, the writing skills course followed a process-genre approach which included several topics, essay structure, outlining, supporting information, and model essays. The course was structured into two phases: introduction and practice, during which students learned pre-writing techniques, brainstorming techniques, and how to create an essay outline. Genre analyses were conducted to identify how moves were organized and how language features were used following genre conventions. Throughout the course, the learners were given prompts and wrote paragraphs and essays on various topics, including descriptive, opinion, cause-effect, comparison-contrast, and argumentative essays. They were also introduced to techniques such as using Venn diagrams and mind maps for brainstorming and introducing convincing counter-arguments, and refutations to improve their writing skills. Throughout each stage of the writing course, they were provided with QR codes and asked to share their opinions related to the topic, generate ideas, gather background information about the topic, form sentences, and provide feedback on each other's work. In speaking skills classes, they were introduced to a variety of topics and involved in practices. They were asked to give and support their opinions, to take conversational turns, to agree and disagree with certain ideas and thoughts, to ask for and

give clarifications and reasons, and to use appropriate signposts to organize their ideas and to take conversational turns.

During these classes, QR codes were used in several ways at different phases of the lessons through an image, text, or video to create a context and to introduce the related subject at the very beginning of the course at the awareness stage, or to give a speech on the related subject during the appropriation and autonomy stages in speaking classes. The integration of QR-based activities into L2 writing and speaking skills was situated within the framework of Engagement Theory (Kearsley & Shneiderman, 1998), which emphasizes the principles of *relating*, *creating*, and *donating*. To promote L2 learners' engagement in language skills, we employed collaborative tasks, project-based activities, and authentic contexts via QR codes over a while during class hours in one semester lasting 12 weeks. In this way, we aimed to challenge the conventional ways of carrying out L2 writing and speaking tasks. Overall, we provided learners with QR codes to access certain websites, visuals, dictionaries, audio materials, and texts at different lengths ranging from a paragraph to essays, videos, songs, corpus samples, and several other applications (i.e., YouTube videos, Padlet). The QR codes were used to give constructive feedback to their written and oral products. They were also used to revise the content of the lesson, which enabled a review and update of the topics.

The data were collected through a survey of open-ended questions to explore their perceived value of QR code use, the effectiveness of QR code use in terms of motivation, interaction, and participation in the activities, and the potential challenges and benefits experienced during QR code implementation in these classrooms. Following this stage, face-to-face semi-structured interviews were conducted with L2 learners to expand and enrich the data gathered through the open-ended questions. Both the survey and interview questions were formed by the researchers based on their classroom experiences as instructors and a review of the related literature. Expert opinion has been obtained from two researchers in the same field of study for the evaluation of items in the survey and interview. Classroom documents, written reflections, and brief field notes were also used as complementary data.

### ***Data Analysis***

In the data analysis stage, we followed a recursive cycle of coding suggested by Moustakas (1994). Initially, we transcribed the data verbatim, transferred the transcriptions to the MAXQDA program, and analyzed it through thematic analysis. More specifically, we read the whole data several times. We noted all repetitive and relevant statements by highlighting them in different colors. We then coded these repetitive items, followed by clustering and thematizing emerging categories. Finally, we constructed descriptions of the learner responses by sorting and categorizing the data into meaningful groups. The sample coding of the qualitative data analysis gathered through interviews is presented in Appendix B. During this procedure, for interrater reliability, three coders coded the data independently by reviewing and analyzing the transcriptions individually. Then, the themes were cross-checked and the divergences and overlapping themes were discussed, and a consensus was reached.

To ensure confidentiality, we followed the principles and ethical standards suggested by the American Psychological Association (APA). We asked students to voluntarily provide anonymous responses without including any identifying information. Additionally, they were informed that their responses would not be used in the assessment and evaluation of their courses.

## Results

### *Experiences of L2 Learners Regarding the Use of QR Codes in Writing and Speaking Practices*

The results revealed four main themes about the experiences of L2 learners regarding QR-code use in writing and speaking practices: (a) ways of implementation in writing and speaking skills, (b) major contributions/benefits of QR code enriched in-class practices, (c) drawbacks of using QR codes and their effects on learner participation, and (d) their perspectives about future implementation and pedagogical implications as illustrated in Figure 1.

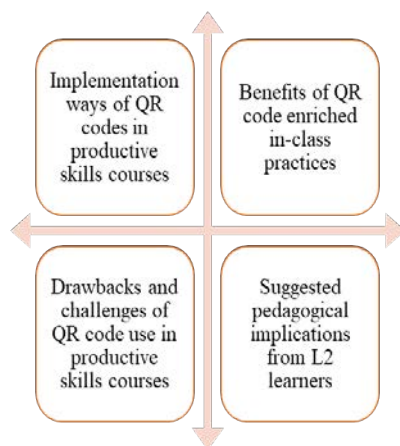


Figure 1. Themes Revealed from L2 Learners' Responses on QR-code Use in Writing and Speaking Practices

### *Instructional Applications of QR Codes in English Writing and Speaking Practices*

L2 learners identified how QR codes were integrated into the phases of writing and speaking skill-based courses, described how they felt during these processes, and viewed QR code implementations. The learners highlighted the feasibility of QR code implementation at every phase of writing and speaking classes. Specifically, they reported that QR codes were used at every stage of writing lessons. These stages included brainstorming, forming a thesis statement, idea generation, topic sentences, discussion, body paragraphs and conclusion, warm-up section, revision, and feedback in writing classes. In addition, in speaking classes, they reported using them to generate ideas and brainstorm, and check the unknown vocabulary, and language patterns to be taught within the specific scope of each lesson. They reported using QR codes to get access to the listening texts, images, videos, and various activities to discuss and speak about the related subject at all awareness, appropriation, and autonomy stages of speaking lessons. These implementations are exemplified in the following learner extract:

- (1) We have used QR codes in the warm-up, discussion, and revision. The generating idea part was for warm-up, discussion for thinking about the features of the topic, and feedback for the revision and conclusion. I would say the discussion is the best part of QR codes as people can get inspiration from others.

During their reflections, the learners mostly emphasized the frequent use of QR code-based activities that required engagement and collaboration among peers in writing and speaking practices. In such tasks pre-, during, and post-writing sessions and at the appropriation and

autonomy stages of speaking lessons, they collaboratively produced and exchanged ideas related to the topics they covered each week based on the prompts and directions given through QR codes.

### ***Pedagogical Gains and Challenges of QR Code Integration in L2 Writing and Speaking Classes***

The results showed that L2 learners reported several pedagogical gains during this process through this new experience with the implementation of QR codes in writing and speaking practices. Specifically, QR codes acted as an agent of change to create a more interactive, engaging, secure, inclusive, and collaborative learning context. The learners shared a variety of benefits and minor challenges of using QR codes in writing and speaking classes, and mostly the positive effects of QR code use on participation in in-class activities.

### ***Benefits of QR Code-enriched In-class Practices***

The learners described the facilitative effect of QR code use on classroom interaction and its significant role in enhancing peer learning. They identified how QR code integration enabled active participation and interaction in the classroom. They stated that QR codes provided an initiative for interactive group work activities, thereby cultivating collaboration by viewing other perspectives on a platform. Based on the responses, specifically, promoting peer learning, QR codes enabled learners to see the responses and exchange their ideas quickly, to easily monitor the work of peers and progress in writing and speaking courses practically. During these interactions initiated by QR-code-supported activities, as noted by the learners, they had the chance to realize their mistakes, and get immediate feedback on their responses from peers and instructors, as seen in the following responses:

- (2) Having the chance to view other's comments and opinions regarding a specific subject also contributes to one's perspective.
- (3) In terms of removing traditional ways of lecturing, experiencing more effective classroom strategies through QR codes and Padlet, and producing some ideas related to topics collaboratively that way has been a better way of improvement.
- (4) QR codes provide benefits to note something and do group work.

These responses suggest that L2 learners referred to their high-level recognition and consciousness through QR codes since they offered an engaging, equal, inclusive, and stress-free classroom atmosphere among peers in the classrooms.

In addition, some participants highlighted the positive effect of having the chance to share their answers or ideas on a topic anonymously on their participation in collaborative activities, as shown below:

- (5) It made it much easier to submit my work and get feedback during the class hour. And it is a plus that I was anonymous the whole time, it was more encouraging to share.
- (6) Since it is anonymous, I can participate more comfortably and willingly.
- (7) It is very productive and enjoyable as I can present my opinion in the lesson without hesitation and visually compare it with other ideas.

As it is illustrated in the extracts above, anonymity in responding to these interactions was the other beneficial aspect of QR code-based activities. Additionally, providing useful and enjoyable learning tasks was the other salient benefit of QR code-based activities. One participant pointed out that QR code-integrated speaking and writing lessons provided a new lesson format and disrupted the conventional flow of courses by allowing paper-free tasks and saving data for future use:

- (8) Using QR codes has many benefits for us. It gives us new experiences and a new format for lessons.

Additionally, the integration of multimedia tools into these learning tasks through QR codes, as highlighted by the learners, provides a variety of pictures, videos, songs, and websites. These codes were reported to promote their active participation in productive skill-based classroom tasks. Moreover, they emphasized that QR codes enabled their active engagement during the lessons by keeping them alert and increasing their attention span.

- (9) In lessons, mostly the subjects can't take my attention or they are about the topics which I am not interested in but QR codes take my attention because I have a chance to reflect on my opinion or I have a chance to say hear me out! I always liked to reflect my opinions and the QR codes were a good way to draw my attention to our lessons.
- (10) I do participate in activities with QR codes like others so it makes me stay awake for the content.

Another reported benefit was that QR code-supported tasks provided exposure to diverse content including new words, idioms, listening texts, and further discussion activities. They reflected further contributions to the improvement of their language skills and competencies. Further, the majority of L2 learners stressed that QR code integration into class activities made the course enjoyable, funny, entertaining, joyful, intriguing, and enthusiastic, as shown below:

- (11) It motivated me in classes because of the diversity of content.
- (12) It improved my ability to comment and discuss. It was a useful method for students.

The results showed that QR codes empowered quick and easy access to classroom materials and tools and effective time management. In the quotes below, participants' comments illustrate their perspectives on these affordances.

- (13) It was fast and easy to access information.
- (14) It enables swift access to websites, seeing other ideas, and no pressure of providing identity.
- (15) It is a time-saving way and everybody can reach and interact with the matter quickly.
- (16) I guess it is fine, especially time management in class. Teachers can access all our replies through QR codes. Also, we can integrate technological tools in the classroom. So we feel more comfortable.

The learners were asked to describe their feelings and thoughts related to their experiences with QR codes. They reported positive experiences of using QR codes in writing and speaking

practices. Several learners described such practices as quick, anonymous, and multi-dimensional tools. Further, they foregrounded that QR code-supported activities make them feel more secure, comfortable, willing, eager, enthusiastic, and creative. They reflected on the role of QR codes in providing a relaxing and interactive learning atmosphere through encouragement to express their viewpoints in writing and speaking classes.

Such practices were found to enable the learners to overcome affective barriers and increase their self-expression skills and self-confidence. The learners reported that QR codes are comfortable, creative, encouraging, fun, and useful. Additionally, they noted that QR codes were engaging, collaborative, and improving as helpful, exciting, enjoyable, interesting, and delightful tools. They also referred to QR codes as convenient, suitable, and practical tools. For example, a learner referred to their use as a 'Rock N Roll' time:

(17) It was the "Rock N Roll" time when we used QR codes.

(18) QR codes are more efficient in discussion parts. Using QR codes, as we did in our lesson, was quite fun both in terms of group work and in expressing ideas to the teacher anonymously without any fear.

The learners noted that QR codes were fast, simple, beneficial, and functional. Overall, they described their experience as successful and informative while also noting that QR codes were time-saving, innovative, and motivating. The learners found the use of QR codes to be instructive, appealing, and confidence-provoking and appreciated the active, creative, equal, and interactive nature of their use. Finally, they reported feeling valued when sharing their opinions using these tools.

Overall, a vast number of beneficial and influential aspects of setting sails for new spaces through QR codes have been reported by almost all participants. Along with these contributions of QR code implementation, however, several challenges were voiced by few learners, which hinders the QR-code integrated learning journey.

### ***Challenges and Drawbacks of QR-code Use in Speaking and Writing Practices***

Most of the learners touched upon the drawbacks that they experienced during the implementation of QR-code-enriched classroom practices in their writing and speaking courses. These challenges were primarily centered on technical problems. For example, the reported challenges were mostly related to technical problems such as the internet connection, and recognizability of the QR codes by cameras on their phones. They shared further difficulties in accessing the related document, file, or site, and therefore losing too much time while scanning the code and the need to (re)charge the phone(s). For example, a learner mentioned that the code given by the instructor was not scanned by his smartphone, and could not open the related website. Another learner reported that the challenge he experienced was that he did not have the necessary application to scan the QR code. They also stressed obstacles with the low battery capacity of their smartphones.

### ***L2 Learners' Suggestions for Further Implementations***

The majority of L2 learners reported that QR code use in language classes had positive effects on their improvement and motivation. Almost all learners reported that they were willing to use QR codes in their future classes. They highlighted that QR codes could be integrated into speaking tasks about movies, books, discussions about controversial topics, and drawing something. They further elaborated functions including communicating with native speakers, video recording their

speeches in English and sharing via QR codes, integrating music into listening classes, playing games, and watching film trailers, as exemplified below:

- (19) We can draw some things, or we can record our voices (of course out of the class), we can solve some problems.

They further noted that they planned to use QR codes in their classes for various reasons, such as playing games, thereby motivating their students, reading articles while teaching specific skills, and sharing answers to classroom activities, as specified below:

- (20) We can use them in other courses in every course as a tool to play a game.

- (21) I think we should use it in other lessons such as reading courses. We can share the answer with our friends. We can share these ideas on the board by Padlet.

Some learners underlined the effective role of QR code use in motivating learners for upcoming activities in their courses and in collaborating with peers and teachers. They related this motivation to the facilitative effect of QR codes in learning; thus, they reported their willingness to integrate them into their teaching. Others remarked that they aimed to implement QR-based activities especially speaking, vocabulary teaching, and reading. Several participants highlighted the effectiveness of QR code use in feedback sessions. Therefore, they reported plans to use QR codes, especially during feedback sessions, to obtain from and give feedback to peers and teachers. Specifically, a learner stated that she would use QR codes to encourage her prospective students to get access to other tools, such as Quizizz, Padlet, and Quizlet.

## Discussion and Conclusion

This research explored language learners' experiences with QR code-integrated tasks in English writing and speaking practices in authentic classroom settings. The learners shared several experiences including the advantages and challenges associated with the implementation of QR code practices, which could inform further instructional applications. The study revealed the positive impacts of such practices on their motivation, engagement, and active participation in productive skills-based practices in English. This result provides confirming evidence of the motivational and engagement benefits of QR code integration (Huah & Jarrett, 2014; Oh-Young, 2022).

QR codes were found to facilitate student participation and interaction and to inspire pre-service teachers for further integration of these tools. Considering the demanding and challenging nature of acquiring productive skills in English, QR-code-integrated activities could be used throughout all stages of writing and speaking classes. They were found to provide a secure, equal, and inclusive classroom atmosphere by enabling effective peer learning, time management, and content delivery. Insight into the implementation of QR codes in the present research supports the evidence in previous research which noted that QR codes create curiosity and make the learning process enjoyable, intriguing, and fun (e.g., Huah & Jarrett, 2014; Kuru-Gönen & Zeybek, 2022; Rivers, 2009).

As a result of our research, we revealed that the writing and speaking tasks supported by QR codes help L2 learners become autonomous by changing the instructional nature of L2 classes. Previous research suggested that such tasks support a positive learning atmosphere and increase learner motivation (Chen, 2022). These tasks contribute to instructional benefits including

efficient, enjoyable, and engaging learning processes as part of formal education (Stojanović et al., 2023).

This research documented that L2 writing and speaking practices supported by QR codes provides a space for peer learning, active participation, and collaboration among learners. They can create a stress-free, engaging, and interactive learning context. QR codes create curiosity during classroom activities which contribute to a sense of active participation in learning (Tan & Chee, 2021). The implementation of QR codes can save time and provide a new lesson format for future use. Previous research has documented such engaging, novel, and facilitative nature of QR code integration into language learning and teaching procedures (Bakla, 2018; Chee & Tan, 2021; Durak, et al., 2016; Kuru-Gönen & Zeybek, 2022; Rivers, 2009; Tan & Chee, 2021). The responses obtained from participants supported these arguments as they highlighted several benefits. Further, compared to the conventional classrooms, QR codes were also effective in the retention of information and content as most of the learners were successful in understanding and remembering the topics covered throughout the twelve weeks. Previous research documented the facilitative role of such tasks in technology acceptance, the cognitive burden, and overall usability (Hernando & Macías, 2023). This finding also seems to support the studies (e.g. Santos et al., 2016) which claim that augmented reality has affordance of content retention as it connects theory and practice by penetrating visualizations into real-life learning situations. Different from these studies, we documented that QR codes eliminate potential affective barriers to writing and speaking skills by providing a secure, equal, inclusive, and embracing platform for learners. Although many teachers are hesitant to implement pedagogical applications of mobile tools, using QR codes reasonably for language learning activities presents a promising method for including authentic language learning materials (Thorne, 2016).

Challenges related to technological infrastructure, such as poor internet connection or the lack of QR code readers or scanners in phones, or financial problems, such as the cost of internet access or non-availability of mobile devices to use these codes, may discourage students from engaging with QR code-based activities. Previous research documented further challenges in the in-class implementation processes including distraction, loss of attention, concentration, waste of time, and using smartphones for non-pedagogical purposes (Şad et al., 2022). Despite these drawbacks, the integration of digital technology, specifically QR codes, into language skill-based classrooms contributes to the quality of language teaching and learning and supports the learning process. QR codes act as a source of a variety of information embedded in various formats and enable learners to access information easily. These codes promote the motivation of students and provoke their interest, thus leading to positive learning attitudes among students (Chee & Tan, 2021). As students are born into a digital world and equipped with digital competencies, it is highly important to integrate digital tools such as QR codes into language education to meet their needs as teachers and scaffold their learning.

### **Pedagogical Implications and Further Study Suggestions**

Pedagogical implications for researchers and language educators are suggested based on the findings of this study. Given that technology enriches language learning sources and materials, cultivates collaboration, and promotes positive attitudes among students (Su & Zou, 2022), it significantly expands English language learning environments. Among them, QR codes expand the delivery of knowledge beyond classroom walls (Winter, 2011). QR-code-integrated L2 language instruction offers a pedagogical tool to share classroom materials and transform conventional student-teacher interaction into a peer-learning-oriented and autonomous atmosphere.

Based on the substitution, augmentation, modification, and redefinition (SAMR) model of technology adoption proposed by Puentedura (2010), QR codes offer a promising tool, addressing each layer of the model. They provide connections and grounds for classroom resources, enable access to working on tasks (e.g. Web 2.0 tools in language practice), modify lesson nature for a more engaging and inclusive platform, and subsequently reshape lessons by disrupting conventional routines and stages in writing and speaking practices. As suggested by Cruse and Brereton (2018), QR codes can be utilized to share links enhancing lesson materials, serving as substitutes for non-technology tools (Stage 1), augmenting lesson tasks (Stage 2), linking to activities that may transform lessons, modifying (Stage 3), and completely redefining (Stage 4) a lesson.

Moreover, various corners around the classroom or school can be established through creating activities using QR codes to practice different language skills (Bakla, 2018). Effective implementation requires training for both learners and teachers. Learners need guidance on QR code usage and introduction to certain practices, while teachers need training to be well-equipped and competent in designing technology-enhanced tasks like QR codes and guiding learners during implementation.

This investigation focuses on the effect of QR-code-supported activities and tasks designed for writing and speaking skill-based courses on English language learners. Future research could consider analyzing QR code-integrated receptive skill-based courses, such as listening and reading, and should address learners at different levels and grades of education. Pedagogical concerns, as revealed in the study, include internet connection as a stumbling block and the necessity of a mobile device during QR-based task implementation. Necessary precautions should be taken to eliminate infrastructure-related problems, such as accessibility to the internet, Wi-Fi connection, electricity, and battery charging of smartphones and computers, for effective QR-based activity implementation. Furthermore, tool repair and security issues should be considered. Lastly, the current study is limited to exploring students' perceptions about QR integration, and future studies could conduct experimental research to reveal the impact of QR-based tasks on skill development.

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## APPENDICES

### Appendix A

#### Survey Questions

- 1) What are your experiences with using QR codes and Padlet in the writing/speaking skills class?
  - a) Which challenges have you experienced in using QR codes?
  - b) Which benefits have you experienced using QR codes?
  - c)
- 2) Which part(s) of the writing skills tasks (e.g., idea generation, topic sentence, thesis statement, supporting details)/speaking skills tasks do you think has most benefited from QR codes?
- 3) Which other ways of QR code implementations would you suggest in your writing/speaking classes?
- 4) How do QR codes affect your learning experiences in writing/speaking skills courses?
  - a) How do QR codes affect your participation in classroom activities?
  - b) How do QR codes affect your motivation in the classes?
  - c) How do QR codes affect your interaction in the classes?
- 5) Would you like to use it in your future writing/speaking skills courses?
- 6) Would you like to use it in your other courses?
- 7) Which 3 adjectives would you use to describe your experiences (feelings, attitudes) of using QR codes in writing/speaking skills class?
- 8) If you have any comments about the course or using QR codes in the course, please add your comments below:

### Appendix B

#### Sample Coding of the Qualitative Data Gathered Through Interviews

Raw Data	Coding
<p>I generally focused on its advantages because I don't see any difficulty for example <u>I can talk about the time. I think QR codes saves the time that we spend during the classroom.</u> For example, let me give you an example. Since we are not native speaker, sometimes when our instructor tells the name of the website when they say let's visit this website, we may not be able to understand the name of the website. <u>But thanks to QR codes, we can directly reach the website that we want. So it is pretty quick and it's easier for us.</u> And also there are lots of students in the classroom and our instructors don't have the time to take our notebooks each by each. Since you are our writing instructor, for example we were writing <u>our thesis statements to Padlet and you were easily check them so you were giving us the more detailed feedback and we were able to understand what is wrong and what is correct.</u></p>	<p>Time-saving benefits of QR codes in the classroom</p> <p>Ease of access to websites using QR codes</p> <p>Easy and effective teacher feedback</p> <p>Self-correction</p>

#### Appendix C

##### Sample Flow of QR Code-Integrated Speaking/Writing Lessons

Stage	Content	QR code utilization
Pre-Awareness-raising	background search about the assigned topic, brainstorming, idea-generation, examining suggested websites	websites, google documents, worksheets
While-Appropriation	forming an essay outline, forming sample topic sentences, elaborating supporting ideas, finding examples	Padlet, google documents, Academic Phrasebank
Post-Autonomy	submission of written documents, peer-feedback, teacher feedback	google documents, Turnitin

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