

QR Code Scanning System as a Meaning-Focused Input Approach in English Textbook¹

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Abstract

It is commonly accepted that educators who prepare to teach materials to meet student needs should cover all skills in English, such as speaking, listening, reading, and writing with additional grammar and vocabulary according to the level of students. Because technology has developed rapidly, educators can design technologically friendly teaching materials or textbooks for mobile phones. One recommendation is using quick response (QR) codes where students can scan and learn to listen to the audio while reading the text provided in the textbook. This activity, listening and reading simultaneously or consecutively, is called the meaning-focused input learning approach. This study used 2D out of 4D (four-D) development model by Thiagarajan (1974), namely, define and design to inform (1) the steps for embedding QR codes in the textbook and (2) to run QR code scanning systems in English textbooks. In the definition stage, the authors performed the following diagnoses: learning activities analysis, learner analysis, task analysis, and concept analysis. Meanwhile, for the design stage, the authors presented QR codes as teaching materials in textbooks compiled through the steps of free, quick, and easy applications, namely 1) converting texts to audio files using the apps *Text to Speech (TTS) Free*; 2) merging the audio files using *Clideo*; 3) uploading the audio files into *Google Drive*; 4) creating QR code through *QR code Generator* to embed into textbooks. The results of this study contribute to materials development in many ways and assist stakeholders in education, such as EFL teachers, curriculum designers, and policymakers.

Resumen

Los educadores que se preparan para enseñar materiales que satisfagan las necesidades de los estudiantes deben cubrir todas las habilidades en inglés, como hablar, escuchar, leer y escribir, con gramática y vocabulario adicionales de acuerdo con el nivel de los estudiantes. Debido a que la tecnología se ha desarrollado rápidamente, los educadores pueden diseñar materiales didácticos o libros de texto amigables con la tecnología, particularmente para teléfonos móviles. Una recomendación es usar códigos QR donde los estudiantes puedan escanear y aprender a escuchar el audio mientras leen el texto provisto en el libro de texto. Esta actividad, escuchar y leer simultánea o consecutivamente, se denomina enfoque de aprendizaje de entrada centrado en el significado. Este estudio utilizó el modelo de desarrollo 2D de 4D (cuatro-D) de Thiagarajan (1974), es decir, definir y diseñar para informar (1) los pasos para incrustar códigos QR en el libro de texto y (2) los sistemas de escaneo de códigos QR miran en libros de texto de inglés. En la etapa de definición, los autores realizan los siguientes diagnósticos: análisis de actividades de aprendizaje, análisis de aprendizajes, análisis de tareas y análisis de conceptos. En tanto, para la etapa de diseño, los autores presentaron los códigos QR como materiales didácticos en libros de texto compilados a través de los pasos de aplicaciones gratuitas, rápidas y fáciles, a saber: 1) conversión de texto a audio mediante la aplicación *Text to Speech (TTS) Free*; 2) fusionar los archivos de audio usando *Clideo*; 3) cargar el archivo de audio en *Google Drive*; 4) crear un código QR a través del *Generador de códigos QR*, para incorporar en los libros de texto. Los resultados de este estudio contribuyen a una nueva referencia para las partes interesadas en la educación, como los profesores de inglés como lengua extranjera, los compiladores de libros de texto y los desarrolladores de materiales didácticos.

Introduction

In Indonesia, English as a Foreign Language (EFL) is still used in most educational settings. Language learners only occasionally engage in meaningful conversation in that language. The apathy of learners in their day-to-day interactions contributes to the difficulty of learning the language. Students need to engage with adaptable English instructional resources in the classroom setting in order to reduce their apathy (Farida et al., 2020). Teaching materials given by educators should cover all English skills such as speaking, listening, reading, and writing with additional grammar and vocabulary according to the level of students, whether primary, pre-intermediate, or intermediate.

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Language teaching materials include both written (such as textbooks and workbooks) and non-printed (such as audios, videos, and Internet/computer-based materials) (Orfan et al., 2021). Sheldon (1988) and O'Neill (1982), explain that textbooks are the heart of English language teaching (ELT) teaching, which includes most of the language input students receive in the classroom. In some situations, textbooks can serve as a basis for the content of lessons and the type of language exercise students engage in (Richards, 2001).

Textbooks are essential and have become an inherent part of education, especially in English teaching and learning. For various reasons, as Hutchinson and Torres (1994) argued, textbooks can play several functions in educational innovation, including serving as vehicles for teacher and student training, providing a concept of what the change will look like, and providing psychological support to educators and students. In other cases, textbooks include teacher directions on how learners should proceed. Textbooks may also be used as exercises for students, providing space to put down their thoughts or practice questions related to the material being studied. However, the textbook may also serve as a trigger for change, connecting the curricular aims and objectives and the student's requirements (Kırkgöz, 2009).

Technology evolves rapidly. It not only functions as a tool that can provide entertainment, but it can also be of great potential in accompanying student learning. Like a computer, the mobile phone has undoubtedly become a necessary tool for learning. Cell phones have the same potential as computers in education. Mobile phones are currently very close to students as a basic need in communicating, looking for information, and watching edutainment programs. In addition, research shows that teenagers spend extra time doing most of their activities on their mobile phones (Pham & Lai, 2022). Some of these affordances allow teachers to divert student exposure to mobile phones from daily use into learning processes. One of the reasons underlying the case of teaching and learning through mobile phones is that they have advanced features, such as cameras. This function allows educators to design teaching materials or textbooks that are friendly to mobile phones with cameras. Hence, using cameras for teaching and learning is now possible.

A unique and interesting features of cell phones is their access to a Quick response (QR) code system. A QR code collects optical data that a machine can read. With sophistication in technology, the data contained in the QR code can be read simply by placing the cellphone camera and running the scanning process. After scanning, the code generator will automatically appear on the cellphone camera screen, and we can click to access the contents contained in the QR code.

The potential for QR codes in textbooks can provide other information that students can access that is not contained in it, such as videos, audio, webpages, etc. QR codes can streamline and even enrich the materials in textbooks. For example, students can still access videos or audio embedded by lecturers that cannot be displayed directly on the pages or sheets of books. It will be more effective and more accessible to scan the QR code in the textbook immediately. Instead of embedding a "link" to access it, you must type the link in the "search engine" on your cellphone. Another advantage, specifically for audio files, is that students can listen to audio via QR code while reading the text provided in the book. This activity gives students two skills: listening and reading in one click, which Nation and Macalister (2010) called the meaning-focused input approach. It involves having the opportunity to learn from listening and reading. Krashen (1981) referred to it as "learning from understandable input." A low density of unknown things in the linguistic input, a focus on the message's meaning, and a high quantity of information is required for such learning.

However, the existence of a meaning-focused input approach is still sporadic in textbooks. If there is one, the textbook compiler only includes the disc separately, and the teacher can only access it through a teacher's guide. Not surprisingly, in-classroom learning activities are still centered on the teacher. The teacher still has to give instructions and play the disc for students to listen to. The teacher should switch from this traditional method to a modern one to keep up with technology. Textbook compilers only need to design textbooks by including a QR code to focus all learning activities on students. With this QR code, students only need to point to their cellphone cameras and click on the link provided in the code.

In addition, due to a lack of knowledge about using or locating the appropriate software to create audio and codes, teachers compiling textbooks do not know how to capitalize on this potential. Therefore, the current study aims to present information about the authors' experience providing textbooks based on QR code scanning systems to enrich students' learning opportunities through meaning-focused input. Furthermore, it aimed to educate teachers and textbook compilers on how to embed QR codes in the textbook and how a QR code scanning system looks in English textbooks. Although several types of research have been carried out related to QR codes, no one has discussed the steps in creating this media. The results of this study contribute to materials development significantly and assist stakeholders in education, such as EFL teachers, curriculum designers, and policymakers.

Literature Review

Meaning-focused input approach

One of the four strands Nation and Yamamoto (2012) created as a balanced variety of chances for learning English is meaning-focused input. The other three are meaning-focused output, language-focused learning, and fluency development. Studying by listening and reading is part of the meaning-focused input strand. It is primarily incidental learning because the learners' attention should focus on grasping what is being read or heard. The meaning-focused output strand focuses on studying by speaking and writing, which is essentially incidental, like the meaning-focused input strand. The language-centered learning strand includes spelling, pronunciation, vocabulary, multiword units, grammar, and discourse. A fluency development strand is the fourth strand of a well-balanced course, and it tries to help learners make the most of what they currently know (Nation & Yamamoto, 2012).

Since the 1980s, the debate over meaning-focused input versus meaning-focused output has piqued the interest of several ELT academics, notably Krashen (1985) who proposed the seminal input theory. It is where Krashen's $i+1$ hypothesis, or comprehensible input, comes into play. The input hypothesis proposes that language is learned by receiving "comprehensible input" slightly above one's current level of competence ($i+1$). The i means our current level, move to $i+1$, the next level along the natural order, by understanding input containing $i+1$. It implies that to obtain information, we should try to listen to and read things a little higher than our current level (Liu, 2015).

Meaningful input is critical for expanding incidental vocabulary knowledge since a lack of such information would be difficult to overcome, limiting the continued acquisition of random L2 vocabulary (Cobb, 2007). In Horst et al. (1998) research study on incidental vocabulary acquisition have undertaken reading as a primary input source for acquiring L2 vocabulary. However, little research has looked into the possibility of learning L2 vocabulary through auditory input (Webb, 2016). Authentic audiovisual information, like textual input, is thought to provide rich student settings and positively influences L2 vocabulary development (Peters et al., 2016).

Kim and Godfroid (2019) studied the effects of auditory and visual input and found that students acquire explicit (conscious) and implicit (unconscious) knowledge from focused input through listening and reading activities. Listening activities with written materials lighten students' cognitive load with better results. Chang (2009) contrasted listening while reading with listening only for story comprehension. As a result, reading while listening showed a strong preference, and most students felt that listening while reading made the activity more accessible and that they paid much better attention. With such a strong and positive effect, Chang suggested that meaning-focused input could be used to develop L2 learners' listening skills in the long term. Chang (2011) reinvestigated the impact of reading while listening to audiobooks on listening fluency and vocabulary acquisition for EFL learners and still found positive results.

Therefore, it appears that vocabulary acquisition can occur effectively through a meaning-focused input approach. Reading and listening produce input, and the learners' mastery can improve if the two activities are carried out simultaneously through while-reading and while-listening (Tennent, 2015). Learning by listening is more complex than learning through reading when listening is not accompanied by visual information. As a result, repeated listening is a valuable activity. (Elley, as cited in Nation & Macalister, 2010) discovered that he needed three hearing chances to evaluate adequate learning from listening input for the same tale; providing conveniently accessible audiovisuals offers an excellent opportunity for students to learn.

QR codes scanning system

QR codes were developed by a Toyota subsidiary to track cars and parts during manufacturing. They were created because short response codes allow faster decoding rates (Gregersen, 2022). Traditional barcodes store data in white and black lines that may be read horizontally in a single scan and hold up to 43 characters. QR codes can store information vertically and horizontally and hold up to 1520 alpha-numeric characters. Data such as email and site addresses, product details, dates, location data, and plaintext may be saved with this significant increase in data (Stazzone, 2023).

QR codes are already used in a wide range of applications. For example, zoos and aquariums allow visitors to use their phones to scan a QR code to get additional information or audio tours about the animals in that exhibit. Several restaurants started using QR codes during the COVID-19 outbreak so customers could view touchless electronic menus on their phones (Sato & Henry, 2021). In addition, nearly every major

smartphone manufacturer has built native QR code scanners into their cameras, allowing users to point their camera at a QR code and open the link in their phone's web browser.

Since Augmented Reality (AR) technology creates a sensory platform to create a supportive learning environment; its potential can be used in various areas of language learning. Reading would help make texts visually enriched for better understanding (Bursali & Yilmaz, 2019), particularly when combined with audio for listening to the reader. It is also not limited to various environmental resources such as photos, text, 3D objects, 2D image/ video or 3D animations, and movies (Wang et al., 2013). Hence, the QR code helps to learn by giving a realistic and detailed display of objects or visual systems that assist learning since it can be used as an identification and key to the created reality material (Hsiao & Rashvand, 2011).

QR codes are a technological advancement that can help students learn more effectively about lecture subjects through visual elements. When it comes to language learning, implementing QR codes promotes contextualized language learning, where QR-enhanced lessons increase positive attitudes and motivation toward learning English (Chen et al., 2022; Yang & Mei, 2018). Integrating QR codes in classrooms has been shown to promote active and distributed learning (Abdul Rabu et al., 2019). Targeted learning may be delivered to students on their mobile devices during or after school (Ozdamli & Uzunboylu, 2015). This has been strengthened by several studies showing that QR codes enhanced reading texts, supported students' comprehension, boosted motivation, fostered retention, and helped access information quickly (Bicen, 2014; Kuru Gönen & Zeybek, 2022), both within and outside the classroom (Crompton et al., 2012; Vandenberghe et al., 2021). This can add value to learning activities (Bakla, 2018; Yusof et al., 2012), keep students interested in a wide range of learning tasks (Chen et al., 2010), and help students be exposed to irrelevant information (Uçak, 2019).

The implementation of mobile learning through QR codes was also researched by Lai et al. (2013). Participants in the study showed a significant interest in using the integrated QR code learning system. Their study also indicated that the QR code design in the course is well suited to new learning methods that incorporate technology with the life experiences of a new generation in education and are necessary for future studies. Besides, Tan and Chee, (2021) explored pupils' motivation toward implementing QR codes in pronunciation learning. As a result, the findings of their study revealed a significant change in students' motivation toward applying QR codes in pronunciation learning. In particular, they also found an increase in motivation in learning pronunciation as students showed interest in learning.

QR codes have made a significant contribution to their use and importance. Real learning experiences are required in the technological learning process. Hence, the QR code has become an appealing technology, but the initial concern was how educators could utilize this tool creatively to create a more active and student-centered learning environment. This study mentions the steps of conducting the QR code in the textbook as the listening enrichment of the reading and dialogue text provided and how the QR code looks when attached to the textbook.

Methodology

This study described the authors' experience creating textbooks with QR codes to achieve a meaning-focused input approach. The information is presented through narrative, which focuses on individual experiences and rewrites them in chronological order to describe a story or process in detail. This article presents step-by-step the preparation of a textbook using a QR code scanning system. The authors carried out an analysis of learning activities, student analysis, task analysis, and concept analysis. At the same time, teaching materials that followed the students' characteristics were compiled. The selection of the presentation of learning materials was adjusted to the learning media used, in this case, the QR code. The audio listening was embedded as an amplifier in the reading text presented. In preparing a textbook, the students' learning needs and habits were considered: for example, what students want to study while considering their habits in using gadgets on a daily basis. As a result, the authors needed to put together a set of teaching materials that could be accessed through cell phones. At the same time, the curriculum and student learning syllabus was used as a basis for collecting teaching materials to be presented in the textbook. As a result, the QR code application as part of a cellphone through a camera was the right choice to be applied to students. Meanwhile, textbook references and online reading sources become materials in the textbook arrangement.

Material development

In developing the material, needs analysis was carried out to ensure that the prepared textbooks could easily be used by students. The materials included learning activities, assignments, and exercises that were needed and liked, their strengths and weaknesses, and appropriate textbook concepts. Before processing

the material into a QR code system, the authors collected various open access references, textbooks, and online reading sources. The material was organized considering the four language skills and according to the learning media that was to be used: QR code, including texts for reading while listening practice, and dialogues for speaking and listening practice. These materials were read by native speakers and the audios were converted into QR codes. After sufficient materials were found, all the QR codes were built into the textbook to help with learning based on meaning-focused input.

Results

Defining stage

The English textbook provided for students consisted of several chapters adjusted to the number of classes in one semester. Each chapter contained the four language skills.

The speaking part provided the context of dialogue or conversation as a warmup in each chapter. In several other chapters, it was practiced through discussion. For the reading part, texts or series⁵ were provided. Reading was always presented at the end of each chapter before the end of class. As for the writing part, a blank page was provided at the end of the chapter after the reading session. The writing session could be feedback from the reading context and a student exercise on the relevant themes provided in the unit. Students could listen while reading the text or listen first and then follow the conversation with their classmates. Finally, this listening part was supplied in a QR code as an audio from the dialogue and reading texts.

This mapping of learning activities was based on the authors' analysis of the abilities and motivations of students. QR code was the core media for presenting audio and audiovisual material. Considering the lack of students' listening and pronunciation skills, the QR codes were created by converting text to speech directly using the voices of native speakers to bring students into real-life situations where English occurs. The strategy of teaching with audio or video, on the other hand, was based on meaning-focused input.

Designing stage

The steps involved in introducing the QR code into the textbook are various steps. We start with embedding QR code steps into the textbook by using some helpful applications and finally insert the code into the textbook.

How to embed QR codes in the textbook

To embed a QR code as an audio alternative in listening and understanding how to pronounce the text, dialogues, and reading, the first step was gathering materials, conversations, and reading texts, which been previously designed into the textbook before embedding the QR code. Here are the steps that are followed:

Convert text to audio using the Text to Speech (TTS) Free app

This application is a text-to-voice converter with natural sounding voices and a free mp3 download. The sound seems natural because it is delivered directly by native speakers. The advantage of this application is that users can choose any language and country as a speaker.

After entering the website, we are greeted with an explanation of the application. *TTSFree.com* is a free text-to-speech (*TTS Free*) website powered by artificial intelligence. TTS provides over 200 standard AI voices and realistic human-like sounds in over 50 languages. Free TTS uses artificial intelligence (AI) and machine learning (ML), two leading *Google* and *Microsoft* technologies. They have created a Text-to-Speech that sounds very human, with features such as customizable sounds, voice speed, pitch, volume, pause, emphasis, audio format, and audio profile settings (TTSFree, 2022).

Everything is accessible for free and can be accessed directly without an account or logging in. In this case, text inputted into the box is limited to only 500 characters per conversion. However, we can continue inputting up to 1000 words daily and return to doing the same activity the next day. "With account" users, can get 2000 characters per conversion for one input in the converter box. So, it is better to create an account. To access and use this application, please visit the link <https://ttsfree.com>, and we will see a display like a Figure 1 below.

⁵ The word "series" is used to describe a continued story. It is a long story and it is worked with through various classes.

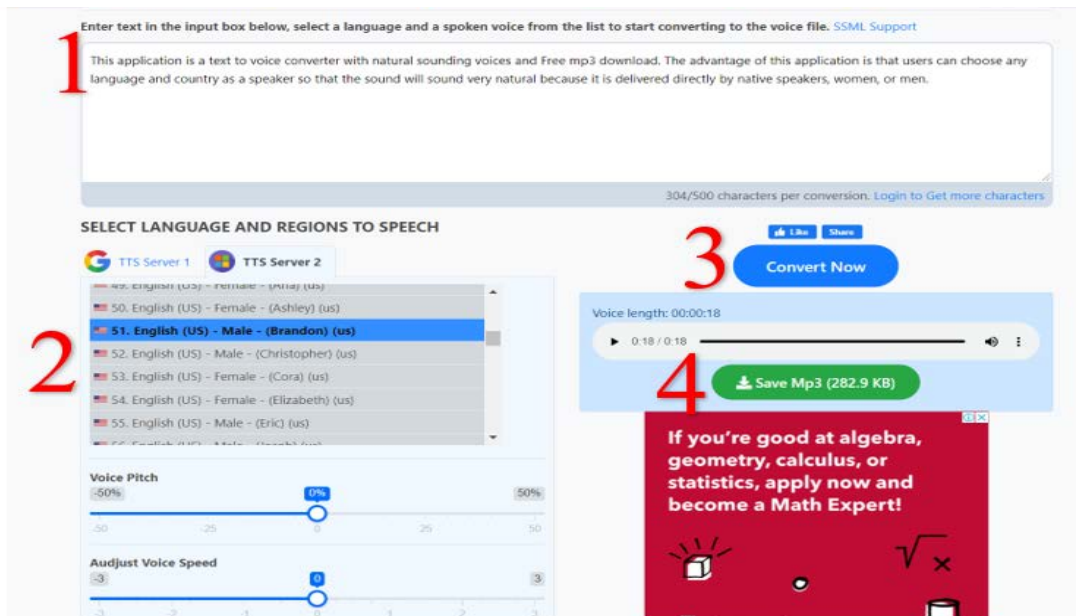


Figure 1: The homepage of TTSFree.com

The information in the figure is:

- 1) Enter text in the input box
- 2) Select language and regions of speech
- 3) Click the blue button "convert now."
- 4) Click the green button "Save Mp3)
- 5) Repeat the activities until all text yours is converted.

Merger the audio file using Clideo

Clideo is an audio joiner that can combine multiple audios for free and download. As mentioned before, TTSFree.com can only convert a maximum of 2000 characters per conversion, so the resulting audio will be short, yet the text we want to use might be too long. Therefore, we need to cut longer texts into snippets and convert them several times, and then an audio joiner is used to merge those short audios (Softo ltd, 2022). Like TTSFree, Clideo can also be accessed without using an account. To access Clideo, visit the link <https://clideo.com/merge-audio>, (see Figure 2).

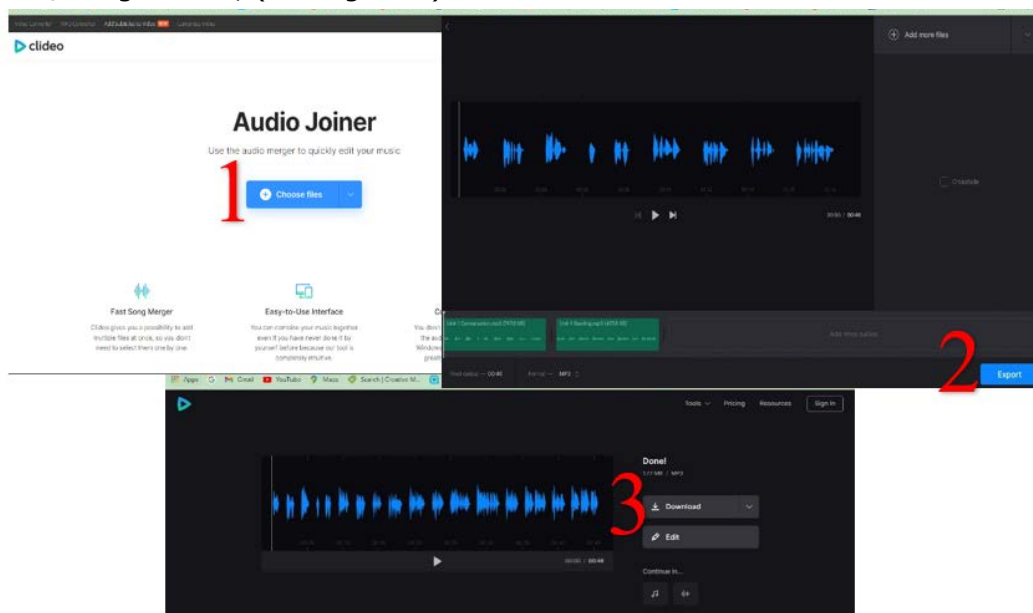


Figure 2: Clideo.com

To merge audio files online, the steps are:

- 1) *Select an audio file.* We can add two or more files from PC, Mac, Android, or iPhone to combine the audios. It is also possible to upload them from *Dropbox* or *Google Drive*. Each file can be up to 500 MB for free.
- 2) *Combine MP3 and other audio.* We can add more tracks to merge. Then drag and drop them until we are satisfied with the order. It is possible to convert and crossfade the music file if necessary. Then click *Export*. Look at the how-to guide to understand better how to combine audio files.
- 3) *Save the result by clicking the "Download."* It is done! Then we can listen to the joined audio to make sure it works. If so, download it to the device or back to cloud storage. Otherwise, just go back to editing.

Upload the audio file into Google Drive.

After the audio compilation is complete, the next step is to upload the audio file to *Google Drive* as external digital storage to access the audio link/URL. The link/URL will be needed to create QR codes. To access *Google Drive*, please go to the link <https://drive.google.com/> and get the link by clicking the right cursors, as shown in Figure 3 below. Everyone who uses gmail. automatically has a *Google Drive* account.

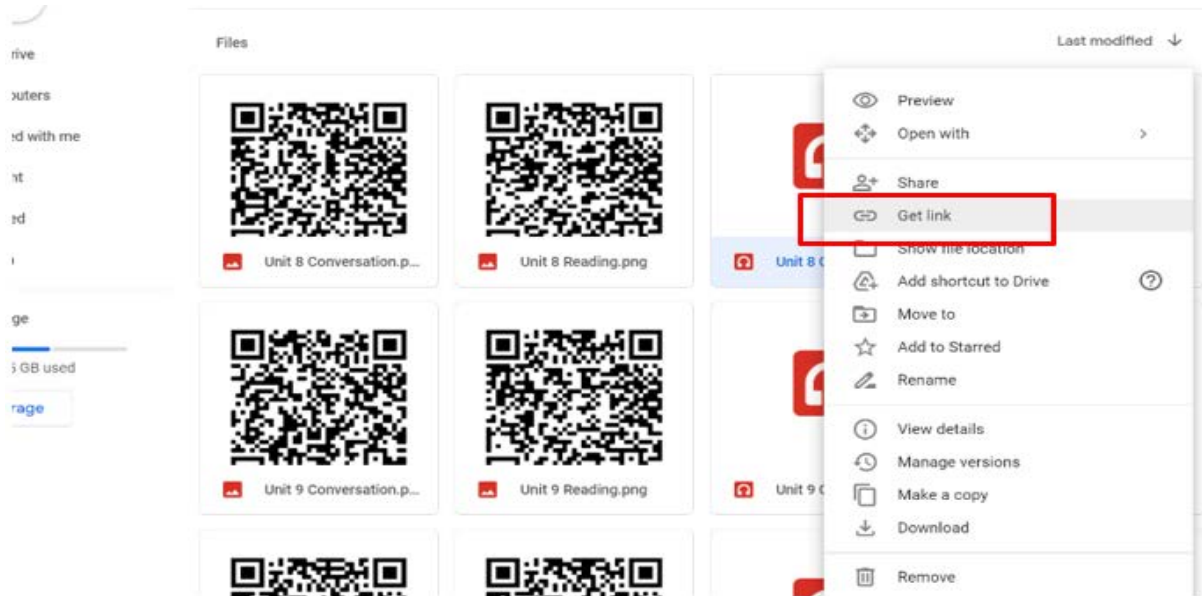


Figure 3: Google Drive

To get the link to audio files, the steps are:

- 1) Click "New" and then "File upload."
- 2) Once the file (audio) is uploaded, click the right cursor on the audio you need, and click "Get the link."
- 3) Make sure to choose "Anyone with the link" before clicking "copy the link." It is done for these steps (*Google*, n.d.).

Create a QR code through" QR code Generator."

After getting the link from *Google Drive*, it is time to freely create a QR code with the QR code Generator application link. As has been said, "QR" stands for "Quick Response", which refers to the instant access to the information hidden in the code (Bitly Europe, 2022). QR code generator is the same as the two previous applications and can be accessed freely without an account. To access this application, go to <https://www.qr-code-generator.com> (Figure 4).

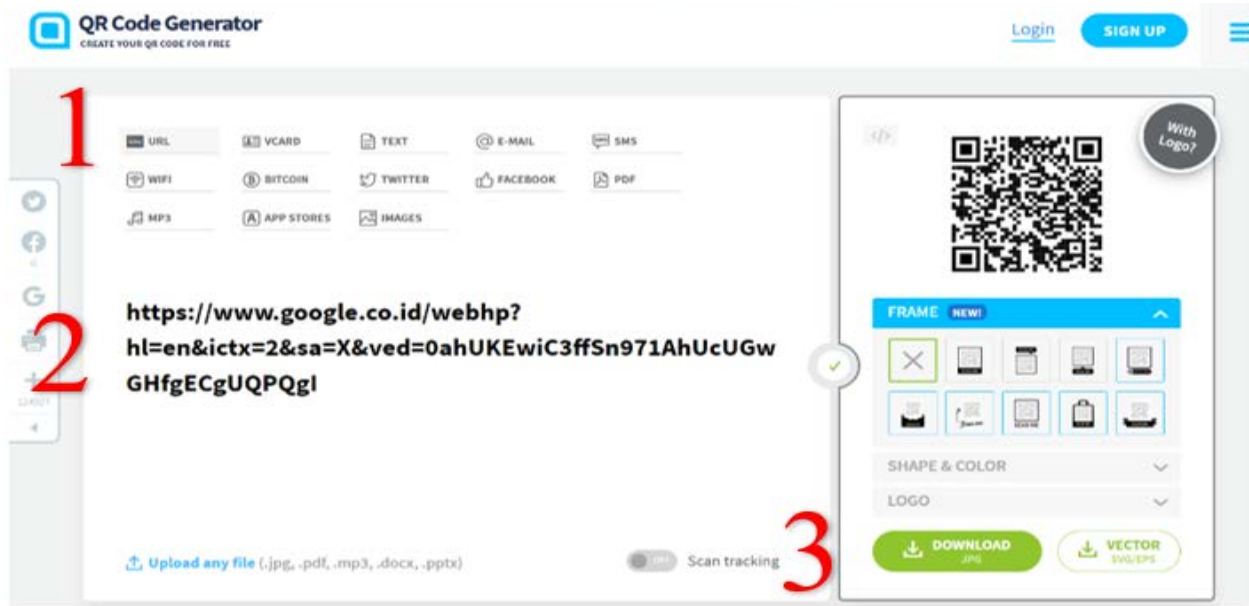


Figure 4: The QR code generator

To get the QR code of the files, the steps are:

- 1) Click the URL menu.
- 2) Input the link from *Google Drive* (Steps 3 above).
- 3) Make sure the QR code is formed and click "Download". The QR code is ready to put in the textbook.

What does the QR code scanning system look like in English textbooks?

The arrangement of the QR code in the textbook depends on the educator. Educators only need to instruct students on what to do with the code. For example, embedding instructions read, "Please scan the barcode above, click the link, and play the audio to listen to the conversation." Students will immediately understand what to do with the textbook by seeing the instructions. Figure 5 shows the examples or the look for the QR code scanning system in the compiled book.

2 Listening & Conversation

Instructions: Working with a partner, repeat this dialogue aloud!

- Student A : Where do you work?
 Student B : I work at the **court**.
 Student A : Are you a **judge**?
 Student B : No. I am a **clerk**.
 Student A : What is the **attorney**'s job?
 Student B : They are helping **defendant**.
 Student A : What **case** is that?
 Student B : Oh, this is **the burglary case**.



**Please scan the barcode above, click the link, and play the audio to listen the conver*

5 Reading Text

Sohila was fifteen years old. She was the oldest child in a large family. Her father, Abdul, decided that it was time for her to get married:
 Abdul: Why don't we find you a husband? You should marry now! Choose Jawed!
 Sohila: But I am too young. Would you please let me grow until I am 18?
 Abdul: Stop! Don't argue!
 Sohila: Please don't do this!
 Abdul: Think of your future! You will learn to love your husband. So, the wedding took place. That was a forced marriage. It was injustice for Sohila. Her father made the unjust decision, and it was too hasty.
 Soon, Sohila became pregnant and gave birth to a baby girl named Zohra. She loved Zohra very much but Jawed was not happy. He wanted a son.



Reading Text Resource is adapted from: (Swanson, n.d.)
 *Please scan the barcode, click the link, and play the audio to listen the reading text.

Figure 5: The QR code in the textbook

Embedding a QR code in the English teaching book makes it easier for students to access audiovisuals that cannot be presented on paper. Students scan the QR code using their cellphone camera, and after clicking on the generator that appears on the camera screen, they will be directed to the link embedded into a QR

code. By clicking on the link, students will arrive at the audio and immediately play it to listen to it. Likewise, if the QR code contains a video link, it will be directly directed to the video and now watched by students. This method does an excellent job of using their phones, giving students a different learning environment.

Discussion

This textbook was prepared by embedding all English skills, starting from speaking, listening, reading, and writing. Learning activities were designed based on many considerations including what might be effective and what students should like. The activities analyzed students from both their strengths and weaknesses, the appropriate task model and the concept of presenting material in textbooks. The same thing was noted by Camps (1998) when writing a textbook for students. After the presentation of language skills is considered, teachers need to describe each skill and choose the categories they think are essential. The textbook used these categories by considering the students' skills or abilities, activities or exercises, achievements, or objective tests for the acquisition stage.

As a meaning-focused input approach, QR codes were compiled from several applications that the authors used in designing and preparing this textbook. The textbook compiler required some applications, such as *TTS Free*, *Clideo*, *Google Drive*, and *QR code Generator* to apply this approach. Those applications were considered the best after the authors' searched by trial and error on several applications. The reason was that some other applications have incomplete and limited features. For example, "Text to Speech (TTS) Free" has many native speaker voices that are more natural than other text converters. The voice results are very natural and sound like native English speakers. Several other studies have also researched TTS Free and found that the app improves students' reading fluency and comprehension (Amin, 2022; Wood et al., 2018).

Embedding audio or audiovisual into a QR code in the English textbook, as the authors did, might help students to listen to and get used to the pronunciation and intonation of native speakers' speech. A similar finding was noted by Bursali and Yilmaz (2019). They indicated that reading would help make texts visually enriched for better understanding, particularly when combined with audio for listening to the reader. QR codes as educational technology to create sensory areas to get users to engage with events, objects, and information in any form accessed via a URL using QR codes. As Wang et al. (2013) stated, QR codes are not limited to various environmental resources such as photos, text, 3D objects, 2D or 3D animations, and movies. They are more effective than traditional printed materials and certainly give students a different learning experience as well as the experience of learning alone. Kuru Gönen & Zeybek (2022) explained that implementing visual metaphors via QR codes makes it possible to enhance reading texts, support students' comprehension, boost motivation, foster retention, and help access information quickly. Hence, presenting audio or audiovisual by confirmed native speakers, places students into real-life in different learning situations to improve their motivation for learning English.

Another advantage of embedding QR codes in textbooks, specifically for audio files, is that students can listen to the audio while doing repeated readings or listening while reading the text or dialogue provided in the book. These activities develop the students' fluency and reading comprehension, as studies showed that reading comprehension and listening comprehension are linked. Peters et al. (2016) reported that authentic audiovisual information, like textual input, was thought to provide rich student settings and positively influence L2 vocabulary development. Hence, the authors recommended listening while reading as a meaning-focused input to improve students' comprehension and fluency. Chang (2009), also suggested that meaning-focused input, reading while listening, contributes to the listening fluency and vocabulary acquisition for EFL learners with positive results.

In this study it was noted that the QR codes in the English teaching book made it easier for students to access audiovisuals that could not be presented on paper. Noroozi and Siyyari (2019) named these aesthetic features that are instrumental in improving the quality of textbook design and book appearance. This is in line with Chen et al. (2022) and Yang & Mei (2018) in their study that implementing QR codes can promote contextualized language learning and increase positive attitudes and motivation toward learning English. Abdul Rabu et al. (2019) said that having QR codes in classrooms is essential for promoting active and distributed learning.

The benefit of QR codes in textbooks is that they provide effective and dynamic learning conditions for students. This strategy covers two skills at once, namely listening while reading. Of course, two skills will yield more benefits than just one. The flexible use of using a cellphone camera makes this method worth considering. Teachers can use this method to create a different learning atmosphere for students.

Meanwhile, textbook compilers can apply QR codes to minimize paper usage in textbooks. Because QR codes have so many benefits, they should be used as a learning tool in the teaching and learning process.

Conclusion

This study presents descriptive narrative information related to the steps taken by the authors in compiling the textbook by considering the meaning-focused input approach. The QR code system, as a sophisticated scanner application, provides benefits to students in accessing information digitally. Teachers also feel the benefits of letting students study independently using their cellphones.

In the current study as a meaning-focused input approach in English textbooks, QR codes were collected from several best software available and after trial and error, several applications can be recommended to textbook compilers or teachers. This system is a student mastery approach to meaning-focused input where students can perform two English learning skills simultaneously, namely listening and reading. The application of QR codes was based on a defined stage analysis before designing it into the textbook. The steps presented in this paper as the designing stage were the utilization of free applications that are very simple to use and access, namely 1) Convert text to audio using the app "Text to Speech (TTS) Free"; 2) Merger the audio files using "Clideo"; 3) Upload the audio file into "Google Drive"; 4) Create QR code through "QR code Generator"; and 5) Embed the QR code into textbooks.

Despite the efforts of several researchers, no research on QR codes with a meaning-focused input approach were previously discovered. As an article with a narrative research design, this paper only presents narrative information related to the steps in designing a textbook with QR codes without directly testing the effectiveness for students. So, it is highly recommended for further research to examine the perception and effectiveness of QR codes in the student learning process. This paper also combines several applications used as a step to create QR codes. There may be applications with exclusive features that do not require a combination of several applications. So, for further research, trial and error can be made for several other applications.

However, irrespective of these drawbacks, this current article presented basic information that can be a reference for education stakeholders, including teachers and textbook compilers. The steps explained in this article can lead the reader to produce a textbook with different teaching materials by embedding QR codes as a meaning-focused input approach.

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