Integrating QR Codes and Mobile Technology in Developing Listening and Speaking Skills in the Teaching of English Language

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ABSTRACT

This action research employed QR codes (quick response codes) and mobile phones as technology tools in developing listening and speaking skills in the teaching of English Language to non-English Language option in-service teacher trainees and secondary school teachers. Conventional listening and speaking activities implemented in a whole classroom may not involve the learners in an optimal way. Thus, learners may find their lesson boring and unchallenging. The objective of this action research was to overcome the above problems. Learners were introduced to the novel idea of creating listening and speaking materials using the recording function in their mobile phones. The taped conversations were then used as listening comprehension exercises. The activity had been successful in the following ways: it generated active learning, increased learners’ interest and motivation thus encouraging more active participation within the class. The learners were in control of the technology and therefore had greater control of the learning outcomes. The listening resources were generated by the learners. They had the opportunity to edit and correct their own work in their own way. They could also re-use their work at a time convenient to them.

Keywords: English language teaching, listening and speaking, technology, mobile phones, QR codes, podcast, action research

INTRODUCTION

In the teaching of English language in the Malaysian classroom, the teaching of listening and speaking employs the communicative language teaching approach which is built around notions, functions, skills, tasks, and other non-grammatical units of organization. Fluency of the language is developed through the use of information-gap and other tasks that required learners to attempt real communication, despite limited proficiency in English (Richards, 2008). Such conventional listening and speaking activities implemented in a
whole classroom may not allow the involvement of the learners in an optimal way. In addition, conventional listening activities may make use of commercial productions not of interest to the learners, or not contextually appropriate.

**STATEMENT OF THE PROBLEM**

It has been observed that learners find the conventional strategies for teaching listening and speaking boring and unchallenging. A feedback from a learner, R5096 (a pseudonym) indicated that “some teacher just open power point and talk. We doesn’t do anything just hear.” In addition, learners may have little opportunity to evaluate their own speaking activities, leading to an unawareness of their own pronunciation errors. The idea of an effective listening and speaking lesson would be to carry out activities that directly involve the learners and at the same time provide exposure to native speakers’ speech. In addition, in the production of speaking activities, creating the sense of ownership and pride in their own work would serve to motivate the learners to improve on their listening and speaking skills. It was with these challenges in mind that the idea of integrating mobile technology in listening and speaking activities was initiated.

**RESEARCH OBJECTIVES**

In this action research, the researchers integrated the use of quick response (QR) codes and mobile technology (specifically, mobile phones) aimed at achieving the following objectives:

i. to motivate learners to learn English
ii. to develop the listening and speaking skills of learners
iii. to encourage learners to use technology in their learning
iv. to allow learners to collaborate and produce language resources for classroom use

**RELATED LITERATURE**

*Related Theories*

This research employed materials simulating real world context in social group settings. The strategy employed relates to the acculturation model (Schumann, 1978) which argues that learners will be successful in second language acquisition (SLA) if there are fewer social and psychological distances between them and the speakers of the second language. In addition, the sociocultural theory (SCT) claims that language learning is a socially mediated process. Language learning arises from processes of meaning-making in collaborative activity with other members (Mitchell and Myles, 2004).
A strong affective filter (for example, high anxiety) will prevent input from reaching those parts of the brain that promote language acquisition. Krashen’s (1985) Affective Filter Hypothesis discusses the mental block to learning, caused by affective factors that prevent input from reaching the ‘language acquisition device’ (Krashen, 1985: 100). Learners learning English in a foreign language context are apprehensive to produce oral speech and are anxious about using the target language. Learners know that producing oral speech is a necessary part of language learning, but it is obviously a challenging feat. Obviously stressed-out, high-anxiety learners may not learn effectively. This often prevents them from speaking or taking in the language at all. The aim of this research was to provide a non-threatening environment and encourage them to use the language in a communicative manner.

Swain’s Output Hypotheses (1985, 1995) claim that practising the language helps learners to observe their own production which is essential to SLA. It allows them to develop the art of talk as interaction. Such practice will reduce their feelings of awkwardness and loss for words in real situations. It may also build their confidence using the second language in social interactions. Practice is a strategy in which learners master their skills progressively from guidance to autonomy and from easy to challenging. Vygotsky’s ‘scaffolding’ refers to the assistance one learner gets from another person (e.g. teachers, relatives, classmates) and which enables him or her to perform a learning task (Chaiklin, 2003). In this research, learners were introduced to listening and speaking materials as input and practice before proceeding with their own tasks. Learners learn best when in their Zone of Proximal Development (ZPD) – by providing materials that are not too easy, and just challenging enough that, with a little help from a more learned individual, they can master the material and shift their zone upward.

**Integrating Technology in Teaching and Learning**

Technology integration specifically mobile learning was the focal element of this research. The use of technology in a language learning environment enhances and not merely aids or assists the learning process. In other words, language learning could and does occur anyway, regardless of the presence of computers, but the incorporation of computers is intended to improve, expand, or enhance language learning. The emphasis is placed on learner and learning-centeredness with the major role for computers as a resource and tool in the process of learning. For example, technology enhances the learners’ listening and viewing comprehension and is elucidated through current understandings of second language learning, human-computer interaction and interface design, sociocultural perspectives on language learning, listening comprehension theory, learning styles, and learning strategies.

Mobile learning (m-learning) refers to the use of mobile, handheld or wireless devices in teaching and learning. The devices encompass but are not limited to the following: mobile phones, personal digital assistant (PDA) and laptops with wireless capabilities. Generally, students are not allowed to bring mobile phones to school.
However, it should be pointed out that schools cannot hold back the tide of technology for much longer. “Kids bring these technologies to schools whether it is banned or not” (Hill, 2011). According to an internet research study, 65% of mobile phone-owning kids at schools that ban those same phones still bring them every day to class and 58% of those learners still use them (Lenhart, 2010). This could be time to think differently about these devices. We should instead leverage these tools for learning, instead of outright banning them.

Our current education guidelines recommend the integration of technology in teaching and learning strategies and activities. The fast-paced developments in mobile and hand-held device technology have seen computer and multimedia capabilities integrated into the latest mobile phones and tablets. These portable handheld devices can be a fantastic learning tool. Whilst the benefits of their use in the classroom are clear, there are challenges utilizing these tools during learning. One of the challenges is keeping learners focus on the task while connected to the internet. The solution is to work with technology rather than to ban it (Blane, 2011). By combining handhelds with a technology called Quick Response (QR) codes, the researchers came up with the idea of using mobile phones and QR codes in facilitating listening and speaking skills. Such activity can be adapted to a range of learning situations.

Byrne (2011) observed that QR codes have arrived in school. QR codes are like barcodes that encode information such as messages, instructions, images or links to a webpage. These are first translated into a pattern of black and white squares, which are posted wherever the teacher wants them – to be decoded later by learners with mobile phones. The technology came from Japan and was used first for commercial purposes, for example, scanning the QR code at the bottom of an advertising poster for a concert with the mobile phone and get taken to a website to buy tickets.

This innovation exploited the novelty of QR codes, mobile phones and integrated learner-centred techniques to better develop the learners’ listening and speaking skills. These techniques followed good teaching practices where:

i. the learners are in control of the technology and therefore have greater control of the learning outcomes
ii. the listening resources are generated by the learners
iii. the learners have the opportunity to edit and correct their own work in their own way
iv. the learners have the opportunity to re-use their work at a time convenient to them

**METHODOLOGY**

The practice and culture of research has been recognized as a means of professional development and continuous improvement for teacher practitioners, and action research is a very practical and relevant form of classroom research. The researchers adapted the commonly known and influential model of Kemmis and McTaggart (1988) – plan, act, observe, reflect; then, in the light of this, plan for the next cycle.
Wadsworth (1991) described this process as being one where action is intentionally researched and modified, leading to the next stage of action which is then again intentionally examined for further change, and so on. The steps in action research allow the project to be documented systematically thus acting as an approach to professionally develop the learners.

The action was implemented on three groups of learners. The first two groups comprised of in-service teacher trainees. These were temporary school teachers who participated in the holiday teacher training towards an award of a formal teaching qualification. Their training options were subjects like Chinese Studies and Islamic Studies except English Studies. Consequently, their mastery of the English Language was not strong. The third group involved secondary school teachers. The majority of them were not proficient in the English Language.

Techniques of data collection included reflection notes and observation. The learners reflected and wrote about their experience. The researchers also kept reflection journals and made observation notes during the course of the lesson implementation. These qualitative data provided a rich and in-depth view into the experiences and effects of the action on the learners. Relevant learners’ reflections were quoted verbatim and cited as “R (numbers)”.

**Implementation of the Action**

Mobile phones and laptops were used as tools in generating listening and speaking activities. According to Prensky (as cited in Attewell, 2005), it is estimated that there are 1.5 billion mobile phones in the world today. In Malaysia, the mobile phone technology has expanded tremendously. Most people have mobile phone functions that go well beyond...
the short messaging system (SMS). The mobile phones used include functions like audio facilities. The more recent advancement in mobile technology is Bluetooth which is a wireless short-range communication technology that can pick up communication from a distance. These are the functions of the mobile phones that were utilized in the teaching and learning of listening and speaking.

This action research was initiated in a series of three cycles in December 2011 with a group of 25 in-service training learners. Also, the research was applied on another group of 27 in-service training learners in March 2012, and again in June 2012 with a group of 26 secondary school teachers in a secondary school, with some modifications for continuous improvement. For example, the activity became more collaborative with the use of station group activities, where Group A would manage another group’s (for example, Group B) listening comprehension activities with taped conversation from the former group (Group A).

\textbf{Description of the Action}

In this research, the researchers used technology as a carrot — and as a great learning tool. The topics for listening and speaking activity were introduced to the learners. A sample of the lesson implementation is attached (Appendix 1). For practice, they listened to native speakers and modelled the native speakers with the aim of helping them improve their pronunciation and speaking style. They used what they had learned in the next stage where they were given an extended conversation script. The activity focused on talk as interaction (Richards, 2008) in which the conversation described interaction that served a primarily social function. This allowed the learners to learn and employ certain communicative skills, while rehearsing in a group, like exchange of greetings, engaging in small talk, recount recent experiences, and so on.

The guided nature of the conversation provided secure scaffolding and allowed the learners to be highly interactive in a collaborative conversational style (Richards, 2008). The content of the conversation script took into consideration the aim of developing some of the skills involved in using talk as interaction such as opening and closing conversations, making small talk, turn taking, reacting to others and using the style of speaking that is appropriate to context. The lecturer was available to assist learners with pronunciation of unknown or difficult words in the conversation script.

When ready, the learners used their mobile phones to tape their conversation. The conversations were taped and re-taped until they were satisfied with the quality of their speaking production.

The final product of each group’s taped conversation was transferred via Bluetooth to the lecturer’s laptop. Each taped conversation would be available for listening comprehension. A set of listening comprehension questions based on the learners’ conversation scripts were distributed to the class. Learners listened to the taped conversation of their friends and attempted to answer the comprehension questions. They checked their answers.
Learners reflected on the effectiveness of the activity. Their reflection notes were compiled and analyzed. Findings and conclusions were derived from the analysis. Their remarks were quoted in this research to reflect their views.

**Main Focus Areas of the Strategy**

This research focused on integrating the use of technology as a tool in developing listening and speaking skills. QR codes bridge the gap between paper and web (Robertson & Green, 2012). Instead of displaying the work on a paper-based, physical bulletin board, with QR codes, the teacher could post a paper version of the learner’s work on the bulletin board, and affixed a QR code next to it for others to see the web version. In addition, QR codes made it easier to create personalized lessons and differentiated instruction especially for learners who need supplemental material, or English language support. Learners also had the opportunity to use their mobile phones to snap a picture of the QR code, get the materials they needed and worked at their own pace, either individually or in groups.

**FINDINGS AND DISCUSSIONS**

In this research, analysis of the data revealed a number of positive results (Table 1). Data was collated from the learners’ written responses. Their feedback was coded, categorized and manually quantified.

<table>
<thead>
<tr>
<th>No.</th>
<th>Effects of the use of QR codes and mobile phones in teaching listening and speaking</th>
<th>Frequency N = 78</th>
<th>% Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Develop the listening and speaking skills of learners</td>
<td>74</td>
<td>94.87</td>
</tr>
<tr>
<td>2.</td>
<td>Motivate learners to learn English</td>
<td>68</td>
<td>87.18</td>
</tr>
<tr>
<td>3.</td>
<td>Encourage learners to use technology in their learning</td>
<td>72</td>
<td>92.31</td>
</tr>
<tr>
<td>4.</td>
<td>Allow learners to collaborate and produce language resources for classroom use</td>
<td>62</td>
<td>79.49</td>
</tr>
</tbody>
</table>

The learners almost unanimously (94.87%) agreed that they developed listening, speaking and pronunciation skills through the use of QR codes and mobile phones. They felt motivated to learn English. They were pleased with the idea of using technology (92.31%) and collaborating in groups to produce their own work. Such results corresponded with Thomson’s (2009) report that mobile technologies such as mobile phones and personal digital assistants (PDAs) helped to raise learner achievement and retention rates, as well as making learning more flexible and interesting. Analysis of
the learners’ reflection feedback indicated that the successes in this research could be attributed to a number of reasons.

**Innovative and Fun**

This was an innovative way of integrating readily available tools – mobile phones and computers – in developing listening and speaking skills. The fun factor motivated quality and generated interest and active learning. R1699 said,

“The use of the handphone as a tool in teaching is interesting. Nowadays handphone is a MUST for the youth or teenager. So when we use it as a tool, students very expert and this is the thing they like to do”

Due to its fun quality, the activity was carried out in a non-threatening environment, where learners could try as many times as they wish, till they were satisfied with the quality of their own products. Consequently the activity made the acquisition of English language skills an enjoyable effort.

This novel way of encouraging listening and speaking also took into consideration the contemporary skills of learners. It made use of technology – especially mobile phone – which is popular and ubiquitously owned by many learners. The innovative potential of QR codes was also being creatively exploited in this activity.

**Control of the Learning Process**

The researchers endeavoured to create a structured and guided learning environment for working but also left enough freedom of the learning process to the learners. The listening and speaking activities allowed learners to take control of the learning process therefore they could develop their skills at their own pace. The learners imitated the native speakers which could potentially improve their listening and speaking skills. In her feedback, R0799 reflected that she “could rewind the taped conversation and make improvements to the pronunciation”. Learners’ autonomy during the lesson was a contributing factor towards the improvement of learners’ English proficiency. According to Hooper, Temiyakarn and Williams (1993), learner control could enhance independence and develop better study habits. Being empowered to decide how, how much, and how long their production should be and the right to decide on their work environment created in them the sense of ownership of their own learning process. It motivated the learners to learn and work as a team to produce something they could be proud of.
Use of Authentic Materials and Strategies

Richards (2008) suggested that in designing speaking activities or instructional materials for second language or foreign-language teaching, it is also necessary to recognize the very different functions speaking performs in daily communication and the different purposes for which our learners need speaking skills. In this research for example, there was effort to provide native speaker input as scaffolding to develop the learners’ speech. “Our listening activity help us to learn how to speak and pronouns correctly” (R5097). Chizzo (2002: 1) stated that,

“social and psychological distance between the second language learner and the target language community is a major factor in determining the degree to which the language learner will acquire the target language without the development of pidginization”

In other words, the more the second language learner experience the target language setting, the more chances he will have at acquiring the target language.

Learning from Easy to Challenging

In any learning situation, learners learn best when new material is introduced at increasing levels of difficulty. It was proven the case in this research.

The lessons started from easy to difficult, it is very suitable lesson plan such as we do in school. We learn the vocabulary first, the meaning of each words, then to the conversation scrip. It take time but I can fully understand about the lesson.

(R1699)

The initial guidance and materials provided the scaffolding to allow the learners to progress from easy to more challenging. According to Vygotsky, learners required help and guidance from people who know more, until they know enough and no longer require assistance to grasp that skill (Chaiklin, 2003). Such scaffolding support was removed when the learners were capable of embarking on their own taped products.

Product Ownership

It was found that the sense of ownership and pride in their product was an important factor in motivating the learners. The learners’ taped conversation was used as genuine product in a listening comprehension exercise to an authentic audience. R5095 wrote,
“My coursemates and I are having fun in speaking English in a role play form. It is funny and exciting to listen our voices been recorded. It helps us to understand the importance of pronunciation and intonation when role playing. We try many times until we think it is good. Because others are listening to our recording.”

When learners felt ownership towards their actions, they worked harder and they wanted to impress their peers. Mobile phones and QR codes as a learning and production tool afforded positive learning experiences. Harrison (2010: 1) reported that research has shown the benefits of mobilising technology for learning included “increased creativity and innovation, greater ownership of learning by learners, real world problem – solving and the development of complex ideas and knowledge transfer.”

CONCLUSION AND RECOMMENDATION

This research on the use of QR codes and mobile phones was intrinsically motivational and proactively initiated by the researchers to examine its potential. It was carried out for three cycles with positive feedback gathered from the learners. The evaluation results of the learning outcomes and learning motivation based on learners’ reflections demonstrated that incorporating QR codes and mobile phones into the English learning process achieved its objectives of aiding the development listening and speaking skills and motivating learners to collaborate and learn with the technology tools. This was due in part to the fact that content delivery was infused with the element of fun in a non-threatening environment. As Krashen (1981: 202) mentions,

The best methods are therefore those that supply ‘comprehensible input’ in low anxiety situations, containing messages that students really want to hear. These methods do not force early production in the second language, but allow students to produce when they are ‘ready’, recognizing that improvement comes from supplying communicative and comprehensible input, and not from forcing and correcting production.

In addition, the use of technology – especially ubiquitous mobile technology – amplified the spirit of novelty and learner involvement. Other factors also contributed to the success of the learning process. Learners were generally receptive to lessons built around learner-centred activities and the use of authentic materials that approached real life context. Learner autonomy and team-work were crucial factors motivating learner’s listening and speaking skills development. These activities could be replicated in any class where listening and speaking skills are taught. They were suitable for all levels of listening and speaking proficiency.

In essence, mobile phones and QR codes are tools which can be used in any situation for any subject or skills using similar techniques. The activities using mobile phones involves zero cost, as every learner possess at least one of these mobile devices.
In fact, it does not require every learner to have a mobile phone; one mobile phone per group would work just as effectively. This teaching strategy can employ audio recorder or MP3 player. Therefore, the strategies used in this research evidently exhibited promising implementation potential. As improvement, it is recommended that future activities may even employ video productions for its audio-visual impact. In addition, excellent local English speakers may be used as scaffolding in the absence of native speakers.

This research has been a rewarding exercise in striving towards the researchers’ continuous professional development. The motivation and encouragement were derived from the delight and appreciation of the learners as they were fully engaged in giving their best production.

NOTE

Quotations are presented as it was written. No corrections of error in language use have been attempted.

REFERENCES


APPENDIX 1

Suggested Lesson Implementation

| INTEGRATING MOBILE TECHNOLOGY IN DEVELOPING LISTENING AND SPEAKING SKILLS |
|---|---|---|
| Teacher’s Name: | Topic: | Social Conversation |
| Class: | Subject : | English Language |
| School: | Time Frame: | 2 hours |

**Summary**
This activity focuses on integrating QR codes and mobile phones as technology tools in developing listening and speaking skills. Learners access their conversation scripts and speaking materials using QR codes and mobile phones. With their script they practice their listening and speaking. This is followed by the production of conversation in groups. The conversation will then be recorded using the mobile phone. The learners may record as many times till they are satisfied with the quality of their product. They then send it by Bluetooth to the laptop for replay. The taped conversation is used in a listening comprehension exercise.

**Technology requirements: Hardware**

1. Mobile phones
2. Computer/laptops

**Technology requirements: Software**

1. Bluetooth
2. QR Code reader
3. Audio software, eg. Media player, Realplayer

**Previous knowledge**

1. Learners have differing levels of speaking and listening ability
2. Learners are familiar with the functions of their mobile phones and computer
3. Learners know how to establish connectivity via Bluetooth.

**Objectives**
At the end of this lesson, learners will be able to:

1. Carry out a full conversation using conversation cards
2. Produce a good quality audio taping of a conversation
3. Answer all the listening comprehension questions correctly

**Printed Materials and Supplies**

1. Speaking Practice cards
2. Listening skill cards
3. Listening comprehension questions cards

**Objective**

At the end of this lesson, learners will be able to:

1. Carry out a full conversation using conversation cards
2. Produce a good quality audio taping of a conversation
3. Answer all the listening comprehension questions correctly
## Lesson Steps

The listening and speaking activity was implemented as follows:

i. The lecturer introduced the topics for listening and speaking.

ii. For practice, the learners listened to native speakers.

iii. They modelled after the native speakers. The aim is to help them pronounce and speak correctly. They will use what they have learned in the next stage.

iv. The learners were given an extended conversation script.

v. In groups, they rehearsed the conversation.

vi. The lecturer is available to facilitate their pronunciation of unknown or difficult words in the conversation script.

vii. When they were ready, they used their mobile phones to tape their conversation.

viii. The conversation were taped and re-taped as many times until the learners were satisfied with the quality of their speaking production.

ix. The final product of their taped conversation was transferred via Bluetooth to the lecturer’s laptop. Their taped conversation will be used for listening comprehension.

x. A set of listening comprehension questions based on the learners’ conversation scripts were distributed to the learners.

xi. Learners listened to the taped conversation of their friends and attempted to answer the comprehension questions.

xii. Learners check their answers.

xiii. Learners reflect on the effectiveness of the activity.