Improving Pronunciation Accuracy for Oral Production Using Online Chinese Pinyin Text To Speech System

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Abstract

Pronunciation accuracy affects non-native Chinese learners’ confidence in their oral production. They need to have instructional technology support to improve their pronunciation accuracy. This self-developed Chinese pinyin text to speech system (http://terengganu1.uitm.edu.my/mandarin/) allows students to give input in pinyin and converts their input into audio output. By listening to this audio output, students can improve their pronunciation accuracy for oral output. An empirical study was carried out in UiTM Terengganu using 56 students in preliminary, intermediate and advanced stages as samples. The outcome of the study validated that this Chinese pinyin text to speech system is able to achieve the objective of assisting students in gaining pronunciation accuracy for their oral production. Students of the preliminary stage showed significantly more positive perception compared to learners of the intermediate and advanced levels.

INTRODUCTION

Pronunciation refers to the ability to use the correct stress, rhythm and intonation of a word in a spoken language. Anyone who has studied a foreign language (FL) knows that acquiring satisfactory pronunciation skills in that language is an elusive task. Even speakers at very high levels of proficiency may continue to speak with a noticeable foreign accent (Rindal, & Piercy, 2013). Pronunciation accuracy affects non-native Chinese learners’ confidence in their oral production. However, previous research has shown that improving pronunciation in the foreign language classroom is challenging, and there is often little time left over in a dense curriculum for pronunciation practice (Afiora, & Benander, 2015). While Liu (2010) reported that students in an immersion program credited the intensive formal preparation with helping them to feel more comfortable speaking with native speakers upon arrival in the host country, although their improved pronunciation could also have been a result of the more effective immersion experience rather than the formal training. Nevertheless, in the normal non-immersive language setting, educational tool has to come in to provide for pronunciation practices and drillings. The learners need to have instructional technology assistance to improve their pronunciation accuracy. This self-developed Chinese pinyin text to speech system
By listening to this audio pronunciation training can be rendered by providing students with direct instruction, although short vowels persisted even after direct instruction, although in the intermediate and advanced stages can be validated through numerous suggestions in the literature that focused training of pronunciation may be more beneficial early on in a language learning sequence (Counselman, 2010; Munro, 2013). If L2 learners in their first semester of study demonstrate improvement as a result of pronunciation training, it will support these suggestions and provide strength to the argument that pronunciation training may be most beneficial to learners just beginning their study of the language, in contrast to advanced learners. Therefore, educational tools that can support and improve pronunciation should be introduced to the learners of the preliminary stage and the comparison in the effects on the learners of the intermediate and advanced stages can be validated through research.

Instructors may worry about time constraints or a lack of resources in the classroom (Foote, Holthy, & Derwing, 2012) or believe that students will improve their pronunciation skills with more language experience or time abroad. However, ample educational technology support can assist in upgrading students' pronunciation skills. There have been numerous suggestions in the literature that focused training of pronunciation may be more beneficial early on in a language learning sequence (Counselman, 2010; Munro, 2013). If L2 learners in their first semester of study demonstrate improvement as a result of pronunciation training, it will support these suggestions and provide strength to the argument that pronunciation training may be most beneficial to learners just beginning their study of the language, in contrast to advanced learners. Therefore, educational tools that can support and improve pronunciation should be introduced to the learners of the preliminary stage and the comparison in the effects on the learners of the intermediate and advanced stages can be validated through research.

Adult L2 learners are often aware of this strong connection between pronunciation and effective communication, but research suggests that they may not be able to repair pronunciation problems on their own. Even after many years of exposure to the target language, whether in the classroom or in an immersive environment, many L2 learners' pronunciation of certain segments or prosodic features remains steady (Counselman, 2010; Derwing & Munro, 2013). Hence, they need to have the support of educational technology to strengthen their pronunciation and bring about effective communication.

The learning goals seem to be more reasonable to expect of L2 learners and more beneficial for communication, and pronunciation training can help learners achieve their learning goals (Saito & Lyster, 2012; Thomson, 2011). Educational technology may aid students to master their pronunciation that leads to the betterment for oral production for communication.

Castañeda, and Rodríguez-González (2011) found that self-evaluation made students feel more positively about their pronunciation. Intuitive-imitative approaches, which depend on the learner's ability to imitate, and analytic-linguistic approaches, which utilize tools such as the phonetic alphabet to aid imitation and production, are two of the most common general approaches to teaching pronunciation (Celce-Murcia, Brinton, & Goodwin, 2010). By providing an educational tool that would allow students to make deliberate self-evaluation by comparing their pronunciation of the system with their own pronunciation, as well as imitating the pronunciation in the system, it is hoped that it will instigate positive perceptions in the students’ speaking self-ability perceptions.

A study measuring the impacts of task type on pronunciation improvement by Liu (2011) reports that improvement in pronunciation was greatest on a word-reading task, and then gradually waned as participants progressed to sentence-reading and free speech tasks. The author explains that L2 learners can devote more time and mental resources to monitoring their pronunciation when they only need to focus on words in isolation. Hence, educational tools that can provide reading words in isolation, moving to sentence-reading and free speech texts might be handy to the learners.

Nevertheless, in the efforts to find out whether direct pronunciation instruction influenced speaking skills, the researchers found that the mispronunciation of short vowels persisted even after direct instruction, although these students did gain an awareness of the sounds of the target language (Atli & Bergil, 2012). It showed that educational technology might not be assistive in bringing about the betterment of overall speaking skills. However, efforts should be made continuously in improving the pronunciation in order to uphold oral output.
In sum, educational technology can be assistive and plays a role in the improvement of pronunciation of the learners of their need. It is hoped that by enhancing their pronunciation, it will help to make progress in the oral output of the learners.

**RESEARCH METHODOLOGY**

An empirical study was carried out in UiTM Terengganu using 56 students in preliminary, intermediate and advanced stages as samples. This is showed in table 1 below.

<table>
<thead>
<tr>
<th>Class</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 preliminary</td>
<td>19</td>
</tr>
<tr>
<td>2 intermediate</td>
<td>21</td>
</tr>
<tr>
<td>3 advanced</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>56</strong></td>
</tr>
</tbody>
</table>

Figure below (Fig. 1) shows the research procedure. Students have to follow each step in order to use the Chinese pinyin texts to speech correctly for the improvement of their pronunciation. Instructor gave appropriate guidance when there was any need.

1. students were instructed on how to access the Chinese pinyin text to speech system at: http://terengganu1.uitm.edu.my/mandarin/index2.php

2. students are given a video project.
   - they write out the scripts for their video project.
   - they check the pronunciation for oral output in the system

3. students answer questionnaire upon the completion of their project at: https://docs.google.com/spreadsheet/viewform?formkey=dGRjOFBUeEhFalkxQ1Q0RHhjdGdNLXc6MA#gid=0

Fig. 1.
Research procedure
Figure below (Fig. 2) showed the interface that appeared in the system. Based on the system, students are able to improve particular words, phrases, sentences and texts for pronunciation.

Search for words, e.g. qu4 (go) –

Search for phrase, e.g. qu4 shang4 ke4 (go for class) –

Search for sentence, e.g. wo3 yao4 qu4 shang4 ke4 (I want go for class) –
RESULTS AND DISCUSSION
The outcome of the study validated that this Chinese pinyin text to speech system is able to achieve the objective of assisting students in gaining pronunciation accuracy for their oral production (mean: 4.01). Students of the preliminary stage (mean: 4.28) showed significantly more positive perception compared to learners of the intermediate (mean: 3.92) and advanced levels (mean: 3.83). It was significant (F value: 3.94; df.: 2; significant value: .024>.05).

TABLE 2
STUDENTS’ PERCEPTION ON THE USEFULNESS OF THE SYSTEM FOR PRONUNCIATION IMPROVEMENT

<table>
<thead>
<tr>
<th>Class</th>
<th>Means perception</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 preliminary</td>
<td>4.28</td>
<td>0.22</td>
</tr>
<tr>
<td>2 intermediate</td>
<td>3.92</td>
<td>0.28</td>
</tr>
<tr>
<td>3 advanced</td>
<td>3.83</td>
<td>0.17</td>
</tr>
<tr>
<td>Overall means</td>
<td>4.01</td>
<td></td>
</tr>
</tbody>
</table>

Degree of freedom 2

Significant value 0.024

CONCLUSION
The finding of this study is affirmative generally. However, there are many different variables that influence the complex process of acquiring second/foreign language pronunciation (Gilakjani & Ahmadi, 2011; Saito, 2012). Hence, providing an educational tool might not generate positive oral output for sure. The pronunciation improvement in controlled speech will eventually have an advantage in the improvement of spontaneous and free speech production (Rallo-Fabra & Juan-Garau, 2011).

Narrowing students' focus to the key phonemes may, at the very least, result in greater awareness of their language production (Thomson & Derwing, 2014). The provision of an educational tool that allows students to focus on their weakest phonemes, such as ȯ sound, will certainly improve students’ pronunciation and bring about the betterment in their oral output.

Assistance from the instructor may be needed to support students in identifying and analyzing commonly occurring patterns of errors as well as to prevent students from focusing on the sometimes negative impact of hearing themselves speaking in the foreign language (Thomson, 2011; Yanguas, 2010). However, for personal practices and drillings, an educational tool such as the Chinese pinyin text to speech system is still very handy to produce improvement in the pronunciation and lead to the betterment of oral output.

The use of automatic speech recognition software, as suggested by Olson (2014), also provides students with instant feedback on their pronunciation. In addition to recording and analyzing one's own pronunciation, the instructor may also incorporate pronunciation quizzes, explicit pronunciation mini-lessons, and contrastive phonology exercises, as well as peer-coaching and one-on-one faculty-student coaching sessions. All these can be done for future studies and ideas of improvement for the present Chinese pinyin text to speech system.

In sum, instructors have to introduce educational tools such as the Chinese pinyin text to speech system to enhance learners’ pronunciation. The advancement in pronunciation will lead to the betterment in oral output.

REFERENCES


