Flipped classroom for teaching English pronunciation through e-learning materials

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Flipped classroom has shown its positive impacts on teaching different subjects with the benefits of maximising the time for students’ practice in EFL (English as a foreign language) classes. The current study investigates the effects of a flipped classroom model on English pronunciation skills of Vietnamese college students. A set of e-learning materials have been designed with the considerations the cultural learning context of Vietnam. Data from the pre- and post- pronunciation tests, a questionnaire and semi-structure interview have been analysed to better understand students’ pronunciation performances, perceptions and attitudes. The findings reveal that students improved their pronunciation and showed their positive perceptions and attitudes towards using the flipped classroom in EFL class of pronunciation. The study also provides pedagogical implications for language teachers when integrating flipped classroom in teaching English pronunciation.

Key words: English pronunciation, Flipped classroom, e-learning

I. Introduction

English Pronunciation, referring to the way a word or language is pronounced, plays an important role in English education. Traditionally, in a face-to-face class, teachers introduce the features of phonetics (physiological, articulatory, acoustic, auditory and perceptual) and the features of phonology (segmental and suprasegmental), give examples and some exercises for students to practice individually, in pairs or in groups. Thus, the limited time for practicing, multi-level learners with different learning pace and learning styles and large size class can affect negatively the learners’ performance.

The development of information and communication technologies (ICT) benefits the society in general and teaching and learning in particular. ICT application into language classes has become unavoidable trends. The effectiveness of technology and modern teaching equipment in the educational process has been confirmed in practice, especially in credit educational systems which focus on developing learners’ autonomy in the learner-centered paradigm. Currently, flipped classroom (FC) has been introduced and recognised worldwide due to its possibilities of solving the classroom problems of lacking time, promoting active learning, increasing teacher-student interaction (Hamdan, Mcknight, Mcknight & Arfstrom, 2014) and improving learners’ autonomy (Santikarn & Wichadee, 2018). The researches showed the positive results of this model on the language performance, learning outcomes as well as the favourable perceptions and attitudes of teachers and students (Choe & Seong, 2016; Hung, 2015; Koroğlu & Çakır, 2017; Prefume, 2015; Santikarn & Wichadee, 2018; Tran, 2017, 2018). However, a large body of the researches mainly focuses on how FC is implemented in teaching and learning English language in general and specific content subjects such as grammar, reading and speaking in particular. The gaps of FC application in English pronunciation lessons need more researches to bridge. Therefore, the current study aims to find the answers about the effects of a flipped model on English pronunciation performance of English-major students and their perceptions and attitudes towards this model when they take part in an English pronunciation course.

II. Literature review

Overview of Flipped Classroom

FC, a creative way of organising teaching and learning activities inside and outside classroom with the use of e-learning material as a pre-teaching tool, reverses the traditional learning environment by introducing the content knowledge and exercises before the face-to-face classes and treats homework as activities and tasks to be done during class time (Bergman & Sams, 2012). Simply put, in this “inverted” model, the lectures are not inside the classrooms any more, but outside the classrooms and FC “uses learning activities to move practice with concepts inside the classroom” (Strayer, 2012, p. 171). Thus, it can maximise the time for
teacher-student interaction, reinforce their relationship (Bergmann & Sam, 2012), improve learners’ engagement (Han, 2015; Hung, 2015), personalise learning process (Basal, 2015; Kang, 2015) and increase learners’ autonomy (Santikarn & Wichadee, 2018). As a result, FC model contributes significantly to shift the views of teaching and learning in language classroom from being a main resource of knowledge provision to being a place for student engagement and formative assessment of students’ progress (Kang, 2015).

The results from various researches on specific content subjects of English language also confirm that the use of FC improves students’ speaking skills (Dewi Suryani, 2014; Jingbo, 2017; Obari & Lambacher, 2015; Tran 2017, 2018), reinforces students’ listening comprehension (Han, 2015; Hung, 2015; Jingbo, 2017; Kang, 2015), promotes other areas of English language, such as students’ grammar (Al-Harbi & Alshumaimeri, 2016) and vocabulary (Tran, 2017). Moreover, flipping English classes also improves students’ confidence, and oral fluency skills (Han, 2015; Hsieh, Wu, & Marek, 2016; Kang, 2015) and increases students’ motivation and interests in learning English (Han, 2015; Tran, 2017, 2018; Zhang, 2018).

Additionally, students showed their positive perceptions and attitudes towards FC. They felt satisfactory, well-prepared and motivated, which result in their self-confidence and participation (Basal, 2015; Hsieh, Wu, & Marek, 2016; Kang, 2015). Students are more active and engaged with their learning process because they have more time to work with their teachers, share their work and get comments and feedback from their classmates and the teacher (Han, 2015; Hsieh et al., 2016) inside and outside language classes. Similarly, students in Kostka and Brinks Lockwood’s study (2015) report that flipping English classes made learning more productive, fruitful, and engaging. Last but not least, e-learning materials and online resources provide more opportunities for students to review the content knowledge due to its availability and accessibility, which positively influence students’ attitudes (Ishikawa et al., 2015; Obari & Lambacher, 2015) and then can adjust their learning at their own pace.

However, FC is documented from teachers with several challenges such as time-consuming preparation of e-learning materials, unwillingness of changing teaching methods, untrained staff of the use of ICT and new teaching model. The students also show some of their difficulties adjusting to being active learners or neglecting to do the out-of-class work (Dewi Suryani, 2014).

Previous studies of FC effectiveness on teaching and learning English pronunciation

A large body of researches on FC revealed the efficacy in terms of students’ performance and proficiency levels (Hung, 2015; Prefume, 2015; Tran, 2017, 2018; Santikarn & Wichadee, 2018; Zhang, 2018; Zhang, Du, Yuan & Zhang, 2016) in various areas of English language. Researches demonstrate positive attitudes and perceptions of both students (Choe & Seong, 2016; Hung, 2015; Prefume, 2015; Tran, 2017, 2018; Santikarn & Wichadee, 2018) and teachers (Köroğlu & Çakır, 2017) towards this model. Specially, some of educational researches on the association of FC with English pronunciation teaching and learning in different learning contexts also affirm the FC effectiveness and favourable perceptions of language learners.

Zhang, Du, Yuan and Zhang (2016) seek sufficient evidences for the effectiveness of the flipped classroom teaching mode in English pronunciation course. The comparison of students’ final exam scores of FC group versus traditional one supports the results that the flipped classroom mode of pronunciation teaching is more effective than the traditional teaching mode while individual face-to-face interviews are carried out to investigate the students’ attitudes towards the teaching modes. Moreover, the individual coaching in the flipped classroom provides great help to the students in their management with the learning difficulties. It also gives them great confidence in their future learning. The most obvious and direct effect of the flipped classroom mode in pronunciation teaching is that it helps to improve the students’ testing scores.
Zhang’s study (2018) confirms that the students’ pronunciation improved significantly through flipped class instruction in self-developed English pronunciation courses. The diversified in-class activities strengthen students’ mastery of the basic knowledge in pronunciation, enhance their interest and motivation in learning, and promote the interactive communication.

Dou (2019) uses FC in English phonetics Micro course and finds that this teaching mode can promote the learning of pronunciation and intonation, and it is help for cultivating students’ ability to communicate in the actual context.

In general, previous studies on FC in English pronunciation subject share the same findings that FC is conducive to pronunciation learning with better outcomes and the students perceived good attitudes towards this new model. FC with its own advantages and characteristics seems to provide a new way of teaching and learning English pronunciation. However, those studies are conducted in different contexts of China as in the cases of Dou (2019), Zhang (2018) and Zhang, Du, Yuan and Zhang, 2016 and in Colombia as in Ramirez (2016). Hence, the dearth of FC researches on teaching English pronunciation in Vietnam higher education context motivates the current study. The study seeks the answers for two questions below:

1. What is the effect of the flipped classroom on achievement of English pronunciation skills?
2. What are the students’ perceptions and attitudes of the flipped classroom in learning English pronunciation?

III. Methodology

Participants in the current study were 20 second year students of English major volunteering to take part in the FC English pronunciation course at Nha Trang National College of Pedagogy. They had no experience with FC before the study. They were consent to do the pre- and post-pronunciation tests, complete the questionnaire and involve in the semi-structured interview. The quantitative data was analysed from the students’ scores of pre- and post-pronunciation test done through Elsa speak and the exercises designed by teachers to better understand their pronunciation performance before and after they joined FC. Moreover, the 27 item questionnaire is adapted from Hsieh et al’s (2015) to survey the students’ perceptions toward the Flipped Classroom Instruction model in terms of Motivation, Effectiveness, Video, Flexibility, Engagement, Interaction, and Overall satisfaction. The focus of data is also on participants’ satisfaction with FC and FC impacts on their learning outcomes and interactions with teachers. Additionally, the qualitative data was informed by the seven-minute interview of six questions from selected 10 students to gain further understanding into the perceptions and attitudes as well as their suggestions to the videos, the exercises, the course organisation and FC application.

Before the study, the teachers designed the videos of introducing the pronunciation features together with the exercises for students to do via Google forms after watching the videos. The students approached the videos and were asked to finish the exercises one week before the lesson. The designed exercises for students to practice their pronunciation in classroom were adapted and amended on the base of participants’ statistic results collected via Google forms. Sometimes, the students were required to prepare the conversations, texts, short stories with their classmates before the lessons. Teacher gave feedbacks on the strengths and weaknesses of English pronunciation for students’ self-improvement. During class time, teacher commented each student’s performance and facilitated students’ practices.

IV. Data Analysis And Results

4.1 Students’ pronunciation performance

Based on scoring reports of tests done through Elsa speak, it was found that mean score of the students’ pronunciation performance after they joined FC was 7.35 with standard deviation of 0.889. The minimum score was 5.1 while the maximum score was very high (8.9 points). This
result was rather satisfactory when compared to their performance before joining FC, which gained the average score at 6.97.

**Table 1: Mean scores of students’ pronunciation performance**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Total Score</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>20</td>
<td>10</td>
<td>4.90</td>
<td>8.60</td>
<td>6.9700</td>
<td>.90269</td>
</tr>
<tr>
<td>Posttest</td>
<td>20</td>
<td>10</td>
<td>5.10</td>
<td>8.90</td>
<td>7.3550</td>
<td>.88940</td>
</tr>
<tr>
<td>Valid (listwise) N</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The paired-samples T-test result indicated a significant difference in participants’ pronunciation performance of the students before and after joining FC (sig = 0.044 < 0.05), which means that the pronunciation performance of the students before and after joining FC was not the same, 0.385 points higher. In other words, the results revealed statistically significant differences between the mean scores in favor of the results after experiencing FC and this improvement was largely attributable to the FC model of teaching.

**Table 2: Students’ pronunciation performance before and after joining FC**

<table>
<thead>
<tr>
<th>Pair</th>
<th>Paired Differences</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest - Posttest</td>
<td>-.38500</td>
<td></td>
<td></td>
<td>.044</td>
</tr>
</tbody>
</table>

The questionnaire results in table 3 also showed that the majority of students agree that their English pronunciation was improved in different aspects of phonetics and segmental features of phonology. The general mean score of the students’ view of their pronunciation performance in the questionnaire was M = 4.36, which is defined totally agree on the five-point scale of the questionnaire. This result means that the students had relatively positive awareness towards the improvement of their pronunciation after joining FC.

**Table 3: Students’ perception of their pronunciation performance**

<table>
<thead>
<tr>
<th>Performance</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>20</td>
<td>3.44</td>
<td>5.00</td>
<td>4.3611</td>
<td>.40284</td>
</tr>
</tbody>
</table>

Further exploration into different aspects of phonetics and segmental phonology revealed the results as illustrated in Table 4.

**Table 4: Descriptive Statistics of Students’ perception of their pronunciation performance**

<table>
<thead>
<tr>
<th>aspects</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Articulators</td>
<td>20</td>
<td>3.00</td>
<td>5.00</td>
<td>4.2500</td>
<td>.55012</td>
</tr>
<tr>
<td>Classification</td>
<td>20</td>
<td>3.00</td>
<td>5.00</td>
<td>4.3000</td>
<td>.57124</td>
</tr>
<tr>
<td>How to pronounce</td>
<td>20</td>
<td>3.00</td>
<td>5.00</td>
<td>4.3500</td>
<td>.58714</td>
</tr>
<tr>
<td>Pronounce words</td>
<td>20</td>
<td>3.00</td>
<td>5.00</td>
<td>4.4000</td>
<td>.68056</td>
</tr>
<tr>
<td>Self-correction</td>
<td>20</td>
<td>4.00</td>
<td>5.00</td>
<td>4.5000</td>
<td>.51299</td>
</tr>
<tr>
<td>Word Stress</td>
<td>20</td>
<td>3.00</td>
<td>5.00</td>
<td>4.3000</td>
<td>.65695</td>
</tr>
</tbody>
</table>
It is notable from Table 4 that most of the students totally agree that they had been equipped with knowledge of identifying articulators, English vowels, consonants, diphthongs, consonant clusters and how to pronounce them. Their pronunciation was more accurate and the most outstanding statistics are M = 4.5 concerning their ability to correct their own pronunciation after getting teacher’s feedback and to make a conversation in English meeting the teacher’s requirement. However, the ability to read tongue twister sentences in moderate speed got the lowest mean score, which mean they were not really confident of their pronunciation when reading sentences that require the flexibility of the articulators and quick gliding from one sound to others.

4.2 Students’ perceptions toward the FC model

The questionnaire result of 18 questions on students perception of FC model showed that the scale reliability coefficient was considerably high (α = .935, N = 20), which means that the questionnaire was sufficiently reliable, and so were the data obtained from it. The students’ overall perceptions of the FC model were presented in Table 5.

Table 5: Students’ Perception toward FC Model

<table>
<thead>
<tr>
<th>Perception</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid N (listwise)</td>
<td></td>
<td>3.79</td>
<td>5.00</td>
<td>4.5815</td>
<td>.37639</td>
</tr>
</tbody>
</table>

The general mean score of the students’ perceptions in the questionnaire was M = 4.58, which is in favor of “totally agree” with the statement of the questionnaire. This result means that the students had relatively positive perceptions towards the implementing FC model in teaching and learning pronunciation course. Further exploration into students’ motivation, preparation, engagement and interaction, the model’s effectiveness, flexibility and overall satisfaction revealed the results as illustrated in Table 6.

Table 6: Descriptive Statistics of perception toward FC Model

<table>
<thead>
<tr>
<th>Perception</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation</td>
<td>20</td>
<td>4.00</td>
<td>5.00</td>
<td>4.7000</td>
<td>.37697</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>20</td>
<td>4.00</td>
<td>5.00</td>
<td>4.6625</td>
<td>.37412</td>
</tr>
<tr>
<td>Flexibility</td>
<td>20</td>
<td>4.00</td>
<td>5.00</td>
<td>4.5250</td>
<td>.41279</td>
</tr>
<tr>
<td>Engagement</td>
<td>20</td>
<td>3.00</td>
<td>5.00</td>
<td>4.6250</td>
<td>.53496</td>
</tr>
<tr>
<td>Interaction</td>
<td>20</td>
<td>3.00</td>
<td>5.00</td>
<td>4.4750</td>
<td>.52503</td>
</tr>
<tr>
<td>Preparation</td>
<td>20</td>
<td>3.67</td>
<td>5.00</td>
<td>4.5333</td>
<td>.46390</td>
</tr>
<tr>
<td>Overall satisfaction</td>
<td></td>
<td>3.67</td>
<td>5.00</td>
<td>4.5500</td>
<td>.40861</td>
</tr>
</tbody>
</table>

It is notable from Table 6 that most of the participants were satisfied with the FC instruction model. Percentage analysis revealed that 95% of the participants agreed that the FC model brought them satisfaction about learning, 5% of respondents are not sure with the highest mean score of M = 4.55, SD =.41. Other categories were also perceived relatively positively, with mean scores ranging from 3.0 to 4.7. the students’ motivation was perceived the highest with the mean score of M = 4.7, SD =.37, which is almost the highest scale on the five-point scale of the questionnaire. This is followed closely by engagement with 1 point lower (M = 4.62). Specifically, the levels of the model’s effectiveness and flexibility and students’
preparation were perceived similarly high (M = 4.66; 4.52; 4.53 respectively). Although interaction had the lowest mean score (M = 4.47), it is much higher than the average score and thus uncovers a rather positive perception of the participants.

Moreover, six questions in the interview were designed to get further information about the students’ overall flipped classroom learning experiences. The interview comments were analyzed for eight themes including motivation, effectiveness, engagement, flexibility, overall satisfaction, learning autonomy, benefits and drawbacks of the flipped model. As a whole, all ten interviewees shared relatively positive attitudes or perceptions towards issues asked in the first seven themes, particularly they highly appreciated the flexibility of the FC model which allowed for self-pace learning and encourage them to enhance their learning autonomy. They also reported that they could watch the videos any time and any place, and as many times as they wanted and this made them feel less stressful in learning because they have so many courses beside pronunciation one that semester. Regarding the effectiveness of the flipped model, most of the participants confirmed that there were positive effects to some extents and they all agree that the FC model improved their English pronunciation and then they could feel more confident when speaking with friends in English. Most of the respondents answered that they felt more actively and satisfied with this new teaching model. Participant A revealed that “The sample videos helped me understand the lessons better and then felt confident to participate in activities in the classroom activities”.

When being asked whether the students met any difficulties when studying pronunciation with the flipped model, participant B said “During learning through the video before the class, sometimes I don’t understand or don’t know whether I pronounce sounds and words correctly or not but there is no teacher to correct my pronunciation immediately”. This could be inferred that they need more interaction with teachers and with friends when they study the lesson before the class meeting. Another difficulty was stated by participant C that “It could be better if the time for them to complete the exercises after learning through the video is longer”. Furthermore, the participant indicated some drawbacks on the video which was “It is not flexible for different levels of students because the exercises seem to be at moderate level. It could be boring for different levels of students because the exercises seem to be at moderate level. It could be boring for those whose pronunciation performance is higher”.

V. Discussion and implications

Firstly, the findings provide further evidence of FC conduciveness to English pronunciation learning. The data shows that learners have a significant improvement of pronunciation performance after they joined FC. As shown in table 2, participants gain remarkable achievements of pronunciation performance with the use of e-learning contents and pronunciation exercises like articulators, classification, word pronunciation, sentence pronunciation, self-correction, word stress, tongue twisters, and conversation. The results are in line with the findings reported by Dou (2019), Zhang (2018) and Zhang, Du, Yuan and Zhang (2016). Although the improvements are not equal in all participants as well as the each lesson, self-correction and their progress of performing English conversation in target language seem to be the most distinctive benefits. These findings highlight FC influences on interaction and feedbacks between teachers and learners and even among the learners, which results in the better pronunciation outcomes in not only learners’ abilities to correct their pronunciation mistakes but also to produce conversation with more accurate features of phonetics and phonology. Importantly, the current study indicates that FC model is advantageous to overall pronunciation skills, which cognitively orients learners to increase control over the use specific vowels and consonants in particular and target language in general, and eventually become a more fluent speaker of English. From this point of view, our findings shed light on the need for practical teachers to design the e-learning materials and pronunciation exercises appropriate with the wide range of learners’ abilities and to consider how to most productively apply the FC model in pronunciation teaching and learning.

Secondly, our findings confirm the positive perceptions and attitudes of language learners towards the use of FC in pronunciation teaching. Data from both questionnaires and
interviews reveals the shared awareness of participants about FC during their learning pronunciation. Language learners highly appreciate FC due to its flexibility, which provides them chances to revise the content knowledge a lot of times (Schultz et al., 2014; Tran, 2017, 2018), to prepare themselves with their weaknesses before the face-to-face lessons and to adjust their learning plan and self-study pace. The e-learning materials in FC model enhance their pronunciation learning with authentic contexts, interesting language input and adjustable exercises. Correspondently, they become more engaged and confident in the classroom language activities and motivated with pronunciation learning process. The results are consistent with those revealed in previous studies by Basal (2015), Hsieh et al. (2016), Kang (2015) and Tran (2017, 2018). Specifically, they claim FC’s effectiveness on not only their linguistic outcomes but also their learning autonomy and learning strategies. Similarly, they share their satisfaction with the use of FC model in teaching English pronunciation. Taken as a whole, FC is considered as a favourable model with various benefits perceived by language learners.

Last but not least, regarding the drawbacks of e-learning materials and FC application, some disadvantages are also identified from the participants’ responses in terms of the course organisation, the time allotted for completing exercises, the one-size-fits-all videos. The learners claim that they need more chances to interact and to exchange more feedbacks with their teachers, require more time for completing the pronunciation exercises and ask for the multi-level content knowledge. Therefore, language teachers should acknowledge the learners difficulties in FC to design their varied e-learning materials appropriate with different learners’ levels, to provide more interactive activities and feedbacks between learners and teachers and to extend enough time for exercises and practice before classroom learning.

VI. Conclusion and Limitation

This small-scale study has shown that English-major students share their positive perceptions and attitudes towards FC and obtain linguistic achievements in English pronunciation course. The designed e-learning materials provide language learners with more learning opportunities and useful supports in improving their pronunciation performance. The learners appreciate FC’s flexibility and effectiveness on pronunciation learning process and strategies. They felt satisfactory, motived and interested during the course. The data shows that FC with its outstanding benefits involves learners in more interactive exchanges with teachers and creates the feelings of preparedness beforehand. With the use of FC, learners successfully and efficiently acquire the content knowledge and accomplish the assigned exercises. However, the data also shows learners’ difficulties during taking part in FC pronunciation course such as the organisation and e-learning designing. Our findings also suggest that language learners shouldn’t take FC’s benefits as granted but the great consideration of learners’ level, the ways of giving feedbacks and in-time supports should be taken into account by language teachers and course designers in order to implement effective ways of promoting pronunciation learning.

In spite of all the findings from this study, there are still a few limitations. The number of the students participating in the study is small and data obtained are not sufficient. Due to the small class size in the current study, there is still the need to explore the implementation of the FC in larger size classes. Future researchers should also utilize a wider range of assessment methods, such as classroom observation and learning diaries, in order to expand our understanding of the FC use in pronunciation classrooms in particular and foreign language classrooms in general.

References


