



An account of EFL learners' self-efficacy and gender in the Flipped Classroom Model

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Abstract

Emerging technologies and mobile devices have enabled improved quality of learning outcomes in the field of language learning. With the opportunities provided by innovative, emerging tools, traditional ways of learning have been enhanced. The flipped classroom is one of the innovative learning models that have appeared in language learning in the last decade. The current study was carried out to investigate the difference that the flipped classroom made on students' self-efficacy and gender. 58 participants with an intermediate proficiency level in English were randomly assigned to one of two conditions: experimental (flipped classroom) and control (traditional) group. The participants employed the Self-Efficacy Survey before and after the intervention of flipped classroom. The results demonstrated a significant increase in self-efficacy scores of the experimental group. When gender was analyzed separately, the females in the experimental group were found to have greater improvements in self-efficacy than their male colleagues in the experimental group when utilizing the flipped classroom practice. In the light of the results, students, especially female students can increase their individual confidence in producing specific or requested performance in language learning while engaged in the flipped classroom.

Keywords EFL learners · Flipped classroom model · Gender · Self-efficacy · Students' characteristics

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1 Introduction

The methods students implement to learn new materials have changed due to the revolution of teaching techniques which has occurred in recent decades. One of the emerging innovations in teaching methods is the flipped classroom, which is regarded as a preeminent learning model. According to Bergmann and Sams (2012), in a flipped classroom, preliminary information outside of the classroom is given to the learners and they utilize class time to construct their knowledge foundation (Bergmann and Sams 2012).

Bruner (1966) and Piaget (1970), two famous constructivist theorists, believe that learners are active participants of the learning process and create their own learning by solving problems with the least possible elementary aid from the instructor. Indeed, constructivism proposes that learners construct and learn their knowledge basis similarly to the way they acquire new content via experiences rather than from lecture (Lotter et al. 2011; Hashemifardnia et al. 2018a; Rusche and Jason 2011). The role of the instructor in this learning process is not to present and transfer knowledge but rather to facilitate and guide the learning process. Regardless of whether an instructor utilizes traditional classroom structures or implements newer learner-centered instruction, they should be eager to make their students autodidactic learners with honed critical thinking skills and the capacity to integrate recently learned knowledge to solve problems or evaluate outcomes. Through providing the learners sufficient autonomy to learn at their own pace and by permitting lectures to be observed by each learner individually rather than as a class activity, the flipped classroom can incorporate straight lecture teaching thereby providing students with both teacher-centered and student-centered electronic instructional techniques. This could lead to changes in the ways in which students learn in the modern classroom. As online technology has advanced, teachers have started to utilize novel techniques and approaches to teach students. Various methods of introducing new material such as problem-based learning and discovery learning are used by teachers. One of the important ways teachers enhance the students' learning environment and provide self-directed learning is by introducing the Flipped Classroom Model (FCM). The reasonable ground for utilizing the flipped classroom model is that the environment for rudimentary introduction of new material changes in this model. Learners receive the materials and interact them before they have their formal introduction to the material in the classroom context. They then carry out tasks in the class, which allows them to use the class time for active learning. In the past few years, multiple approaches have emerged for executing the flipped classroom, and among them is the flipped mastery model recognized by Bergmann and Sams (2012), which will be appraised to recognize if it can increase the self-efficacy of the learners.

Although a volume of existing studies have shown that the flipped classroom model is an emerging and popular model in language learning which cite multiple examples of teachers testifying to the effectiveness of utilizing a flipped classroom (Milman 2012), few studies have been done to provide statistical proofs of its efficacy. Fewer still sought to determine whether students from conventional and flipped classroom settings have significant differences in self-efficacy and if so, how this difference might be related to gender in the EFL context (Bergmann and Sams 2012; İyitoğlu and Erişem 2017; Hao 2016; Kurt 2017). According to Bergmann and Sams (2012), application of the flipped classroom is beneficial because the form of learning is revisited and the

process-based nature of the learning in the flipped classroom enriches learning outcomes “while learners’ progression might increment model and make them lifelong learners” (p. 24). It is observed that learners have additionally recognized that having a positive attitude towards their learning with a flipped classroom inspires them to do more in their studies (Tomas et al. 2019). Further research is needed to reveal whether student’s individual belief in their performance and gender representations are side effects of learning through the flipped classroom model. How the intervention of flipped classroom can make a difference in self-efficacy in general and across gender is the focal point of this study. Specifically, this study addresses the following research questions:

- RQ 1. Are there any statistically significant differences between pre and posttest self-efficacy scores of students in the experimental group?
- RQ 2. Are there any statistically significant differences between pre and posttest self-efficacy scores of students in the control group?
- RQ 3. Are there any statistically significant differences between pre and posttest self-efficacy scores of male students in the experimental group?
- RQ 4. Are there any statistically significant differences between pre and posttest self-efficacy scores of female students in the experimental group?
- RQ 5. Are there any statistically significant differences between pre and posttest self-efficacy scores of male students in the control group?
- RQ 6. Are there any statistically significant differences between pre and posttest self-efficacy scores of female students in the control group?
- RQ 7. Are there any statistically significant differences between pretest self-efficacy scores of students in the experimental and control group?
- RQ 8. Are there any statistically significant differences between posttest self-efficacy scores of students in the experimental and control group?

2 Review of Literature

For decades, educators have taught learners using traditional classroom lecture and having learners follow up with homework. The crucial theory behind this method of instruction is that the teacher provides the learners his/her introduction to the classroom content first, provides some examples, cases or problems and then the learners do some assignments to consolidate their newly acquired information on paper. If learners had questions about the assignment, they would bring the work to the teacher before the following class. Then, the lecture from the past day would be reviewed by the teacher and he would address any questions which may have been provoked by the assignment during this review. This is a traditional model of effectively conveying the knowledge and skills to their students. Nevertheless, this form of instruction has numerous disadvantages (Abedi et al. 2019a; Kirschner et al. 2006). It obviously makes students passive receivers of knowledge instead of creators of it. This apparently inhibits meaningful connections between the content and transfer of that content into another context. Learning becomes sustainable when there is active involvement in the process and interactions occur between the elements of learning process.

Many teachers have stepped away from traditional learning approaches because their students have evolved from previous generations' passive learners. Modern students are often distracted and can be seen losing a great portion of seat time in the classroom due to extraneous activities. It has been demonstrated that for these students, direct instructional methods are obsolete (Ash 2012; Shakibaei et al. 2019). Students traditionally are required to just passively attend and listen to instructor's lecture and collect information through notes and examples given. This method of instruction has been revealed to be ineffective for the students of the present time (Abedi et al. 2019b; Brunsell and Horejsi 2013).

Positive outcomes in their classrooms have been reported by those educators who have integrated the flipped classroom. Students were noted to be more involved in their own learning through collaborations with the teacher and their peers to resolve problems in learning (Bergmann and Sams 2012; Davies et al. 2013; Lai and Hwang 2016; Roach 2014). Learners were observed to take charge of their own learning and teachers started to interact with the students more actively (Lai and Hwang 2016; Sohrabi and Iraj 2016). Instead of trying the work at home and failing to complete work due to lack of comprehension, students received instantaneous feedback on material and methods from their teacher. Reducing face-to-face lecture-based learning encourages students to study and learn in the classroom through other methods, such as collaborative work or peer education while utilizing technology in flipped teaching (Gilmartin and Moore 2010). With access to learning content outside the class, students can use features such as pause and rewind to privately revisit confounding information (Bergmann and Sams 2012; Doman and Webb 2014; Hashemifardnia et al. 2018b). Flexibility and the ability to adapt the learning pace with differences in individual attention were some of their reasons noted for the observed gains of the flipped classroom model (Herreid and Schiller 2013; Muldrow 2013). Additionally, when students make use of their own knowledge in the classroom, they take ownership of their own learning process and can be inspired to want to learn more about a topic because it becomes more personally interesting (Hao 2016; Namaziandost and Nasri 2019). Governing learning pace combined with positive personal learning experiences can result in increased success in the classroom (Janotha 2016; Ajzen 2005). According to the theory of self-efficacy (Bandura 1977), individual behavior is subject to awareness of and congruence with the anticipated results, which inevitably affect a person's learning outcomes. In simple terms, motivation is about the students' self-view of their ability to complete tasks. When operating at that own rate, it could be suggested that the improvement in self-awareness could improve self-efficacy as well (Bandura 1997).

Some studies have been done on self-efficacy of the students in flipped classrooms (Enfield 2013; Lai and Hwang 2016; İyitoğlu and Erişem 2017). As a common conclusion of the studies, authors found a correlation between self-efficacy and academic success in the positive direction. As Jonatha (2016) claims self-efficacy gives way to success. That is, a strong sense of self efficacy predicts increased performance and success which then become grounds for greater self-efficacy.

In regards to gender and self-efficacy, it is observed that there are different attitudes towards education and especially to science education across gender. Existing investigations on gender in association with self-efficacy reported mixed results in science education. Some studies found that male students had higher self-efficacy than female students in science education. This is attributable to common gender stereotypes related

to science education (Lerdpompkulrat et al. 2012; Sağlam and Toğrul 2018; Stoet and Geary 2018). The key reasons for this gender disparity in science education are said to be rooted in the different social roles of boys and girls in society, as well as persistent negative stereotypes for females (Steele 1997; Tindall and Hamil 2004) in science. However, there are some studies highlighting non-significant gender differences regarding self-efficacy and attitudes about ability in math and science classes (Kiran and Sungur 2012; Sezgintürk and Sungur 2020; Vogel and Human-Vogel 2016). In the field of language learning and technology use in a specific model like the FCM, self-efficacy and gender has not yet been investigated extensively. The studies on self-efficacy and flipped classes highlighted positive attitudes because of the satisfaction derived from meeting basic cognitive needs such as a sense of competence, autonomy and social interaction (Ha et al. 2019). This could result in an increase in self-efficacy especially in a technology-integrated classes where students are claimed to have become autonomous, self-regulated and self-confident through participation and interactions in a technology enhanced learning environment (Namaziandost et al. 2018; Yang 2017). Although there is a plethora of research on the technology integration in language classes and a meta-analysis study by Grgurović et al. (2013) which demonstrated that the integration of technology in language classes increases academic achievement, few studies (i.e. Yang 2017) underpin affective characteristics such as self-efficacy, or self-efficacy across gender into discipline-specific fields such as language learning. Whether the flipped classroom intervention makes a difference in self-efficacy or whether gender has an impact within empirical designs is generally ignored. As we are in an era where learners' affective characteristics are considered to be as important as much as their cognitive characteristics and complementary to their learning, studies taking these considerations into account are necessary to having an accurate portrait of learners in foreign language education.

3 Methodology

3.1 Participants

The research included 58 intermediate EFL learners registered for the General English course in a private coed language institute in Iran at the time of research. The researchers further applied a placement test to choose more homogenous participants from the population and to determine the language level of students before any treatments. Having scored between 30 and 39 in the test, the students were identified as lower intermediate users of English which is equivalent to CEF B1 threshold-independent users. Based on the findings of participants' need analysis, their major motives to register for an English course was to learn General English and improve their language skills. Female ($n=27$) and male ($n=31$) participating students with the age range of 15 to 19 were randomly divided into two groups: experimental and control. Prior to data collection, the researchers submitted consent forms to the students to participate in the study and asked them to sign them. 58 students agreed to be participating while four rejected the participation. They were included in the experiment but their scores were not statistically analyzed.

3.2 Instruments

Two data collection instruments were used in the present study. The first instrument was the OQPT, which was utilized to collect data on the learners' proficiency. The text included 60 multiple-choice items and those who achieved correct scores from 40 to 47 were determined to be at the intermediate level (Allen 2004).

The second data collection instrument was the Self-Efficacy Scale (Greene et al. 2004). It was employed to both groups to reveal students' perceived individual beliefs about their learning. The original scale has a Cronbach α reliability of .91 and has been validated with highschoolers. It included seven statements which measure the students' confidence in their own learning in the current context. Participants answered with values ranging from 1- Strongly disagree to 4- Strongly agree. Total scores were calculated to identify individual participant's final scores.

3.2.1 Procedure

Before the treatment, researchers generated podcasts with full motion videos (vodcasts) about the content of the course. They were produced by lectures for each section where the instructors explain the topic of the units with examples. Some of the examples and extra activities were presented as videos and screenshots of PowerPoint slides which are generally common lecture delivery media for traditional classes. These digital materials were uploaded on Edmodo, which is a free learning management platform for a digital classroom. It provides real-time feedback when necessary. Audio visual lectures varied between 10-12 minutes in length which was suggested as an appropriate and manageable screen viewing time (Andersen and Schiano 2014; Bergmann and Sams 2012). Students exposed to the FCM had access to the digital class and received vodcasts, extra links, and study materials (more examples and extra activities as homework). The researchers randomly assigned participants to each group. The classroom sessions with the groups were four-hours per session. The control group had the morning session and the experimental administered to both groups. Then the intervention started. Students in the experimental group which were exposed to the FCM had the afternoon session. Before the intervention, the Self-Efficacy Scale was administered to both groups. Students in the control group continued their English classes in a traditional classroom environment.

The control group (CG), composed of 27 students (54% male; 46% female), received content in the lecture format and example presentations in a traditional way of teaching. The instructor introduced new subjects, lectured, and if time permitted, let students do practice during class, and assigned students homework at the end of class. The students had formative tests during the 14-week period and a summative assessment test at the end of it.

The experimental group (EG) was 31 students (52% male; 48% female) and received the content uploaded on Edmodo and were involved in either group work or pair work to work on the topic of the week. The instructor gave feedback visiting each pair or group during the class session. The class session was dedicated to explain the issues in depth, leading the discussions or pair/group work or completion of the assignments provided before. When involved in interactional patterns such as pair work or group work, students were allowed to review the lecture or worksheets or to

ask leading questions on Edmodo through their mobile phones in class. To make a link between materials provided and the activity in the class, students accessed the online material in the format of vodcast or uploaded documents. There were some activities or worksheets assigned to be worked on during the classroom time. The assignments and assessments tests were identical to the activities of the control group. After the fourteen weeks, both groups were given the Self-Efficacy Scale as posttest.

3.2.2 Data Collection and Analysis

The pre-treatment Self-Efficacy Scale as was administered to both classes before the treatment. After fourteen weeks of intervention, all students were given the same scale as post-treatment Self-Efficacy Scale. A quantitative research method was applied to compare pre and post intervention scores of students on the scale. **Data was analyzed** using the descriptive statistics of the test scores before and after the intervention. Paired sample t-tests were conducted to determine whether the mean differences between two sets of tests scores (pre and post) of participants and participants across gender. Also, independent t-test was used for the analysis of means of the pretest and posttest scores of students in the EG and CG.

4 Results

A paired t-test was applied to analyze the test results and see if there were any differences between pre and posttest scores of students in the experimental and control group with a further analysis to examine whether there were significant gender differences in self-efficacy scores in each group. The first six research questions were answered with the analysis displayed in the Tables 1–6. An independent t-test was also conducted to evaluate the differences between the means of the EG and CG in the pretest and posttest separately. The research questions seven and eight were answered with the analysis presented in textual format below the Table 6.

Table 1 and 2 present results for the paired samples t-test both for the EG and CG.

Table 1 shows that there is a significant difference between the pretest mean score (24.7742) and the posttest mean score (26.0968) ($t_{(30)} = 3.474, p < .05$) of the learners in the EG. This implies an improvement for the EG in their perceived self efficacy after the FCM intervention.

Table 2 shows that there is not a significant difference between the pretest mean scores and the posttest mean scores of the learners in the CG ($t_{(26)} = -2.301, p > .05$).

Table 1 Results of t-test and Descriptive Statistics for the EG

Group	n	M	SD	t	df	p
EG Post	31	26.0968	3.52472	3.474	30	.002*
EG Pre	31	24.7742	3.97249			

* $p < .05$, ** $p < .01$

Table 2 Results of t-test and Descriptive Statistics for the CG

Group	n	M	SD	t	df	p
CG Post	27	23.4074	3.65070	-2.301	26	.059
CG Pre	27	23.8889	3.86636			

* $p < .05$, ** $p < .01$

Gender across the participants in each group was analyzed as regards to their pre and posttest self-efficacy scores, the findings are displayed in Table 3 and Table 4 :

Table 3 displays that there is not a significant difference between the pretest and posttest mean scores of the male students in the EG ($t_{(15)} = -.377, p > .05$).

Table 4 shows that there is a significant difference between the pretest mean score (25.5800) and the posttest mean score of the female students in the EG (24.6100) ($t_{(14)} = 2.010, p < .05$). This implies female learners in the EG had improvement in their perceived self efficacy after the intervention when compared with their counterparts.

Table 5 shows that there is not a significant difference between the pretest and posttest mean scores of the male learners in the CG ($t_{(14)} = .283, p > .05$).

Table 6 also shows that there is not a significant difference between the pretest and posttest mean scores of the female learners in the CG ($t_{(11)} = .517, p > .05$). Table 5 and 6 demonstrate that there was no statistically significant gender account in the pre and post self-efficacy scores of females and males in the CG.

Concerning the independent t-test analysis, there was no significant difference in the pretest self-efficacy scores of 31 participants in the experimental group ($M = 24.7742$, $SD = 3.97249$) and of 27 participants in the control group ($M = 23.8889$, $SD = 3.86636$) ($t(56) = .776, p = .395$). Hence, the result shows that the learners in the two groups had same level of self-efficacy in the pretest before the intervention of the FCM. However, when the posttest scores of these participants were compared, there was a significant difference in the posttest self-efficacy scores of 31 participants in the experimental group ($M = 26.0968$, $SD = 3.52472$) and of 27 participants in the control group ($M = 23.4074$, $SD = 3.65070$) ($t(56) = .2852, p = .004$). This indicates that the two groups significantly differed in terms of their self-efficacy scores after the FCM intervention.

5 Discussion and Conclusion

These noteworthy results suggest that intervention of the FCM significantly increased the participants' self-efficacy. Considering the classroom applications of the FCM in

Table 3 Results of t-test and Descriptive Statistics for the Male Students in the EG

Group	n	M	SD	t	df	p
Male EG Post	16	25.1875	4.43048	-.377	15	.711
Male EG Pre	16	25.6875	5.05594			

* $p < .05$, ** $p < .01$

Table 4 Results of t-test and Descriptive Statistics for the Female Students in the EG

Group	n	M	SD	t	df	p
Female EG Post	15	25.5800	2.84856	2.010	14	.048*
Female EG Pre	15	24.6100	2.66726			

* $p < .05$, ** $p < .01$

this study, these results were not surprising. To start with and the class commenced with discussions and interactions among students in groupwork and pair work. Flipped learning outcomes and quality depend on whether the students pursue the practice of training outside the school. The teacher used online platform to ensure that the pre-class instructional materials were presented to the participants for the intervention, students were involved in watching the instructional videos, studied the uploaded materials and received feedback, extra materials, links and pointed questions before the class.

The findings of the present study are in line with studies by Chao et al. (2015), Hsieh et al. (2017), Hung (2015, 2017), and Lee and Wallace (2017) on the point that flipped teaching generated positive outcomes. Nevertheless, the prior researches were carried out to investigate the impact of flipped classrooms on language skills but not on the students' characteristics as was the case in this paper. This study seems to be one of the recent studies carried out in the field to investigate whether the flipped classroom makes a difference on self-efficacy and how gender seems to be related with any differences in English classes. The observed benefits of the FCM could be reflective of active learning where language learners go through high level cognitive processes such as critical thinking (Kong 2014) and decision-making (Park and Han 2018) while involved in learning. These processes are highly likely to lead learners to actively and consciously make connections between what they already know and what they expect to achieve in language learning performance. A novel active learning model such as the FCM can implicitly result in increasing the aspirational aspects of learning potential, and more importantly, accelerate the student's individual belief in their own capacity to learn through self-paced autonomous learning. Specifically, as regards to the context of flipped instruction in Iran, such interventions may develop EFL learners' pragmatic competence (Haghighi et al. 2019) and help overcome classroom issues such as the refusal to speak act among Iranian EFL learners mentioned in the study by Allami and Naeimi (2011). These studies implied that learners in the flipped classroom became active students through pedagogical elements such as discussion, group projects, and so forth, compared to the generally passive and submissive portrayal of Iranian EFL learners in traditional classes. The studies highlighted that the

Table 5 Results of t-test and Descriptive Statistics for the Male Students in the CG

Group	n	M	SD	t	df	p
Male CG Post	15	23.5000	3.92337	.283	14	.781
Male CG Pre	15	23.3333	4.45079			

* $p < .05$, ** $p < .01$

Table 6 Results of t-test and Descriptive Statistics for the Female Students in the CG

Group	n	M	SD	t	df	p
Female CG Post	12	23.4783	2.88774	.517	11	.616
Female CG Pre	12	23.0933	3.82476			

* $p < .05$, ** $p < .01$

improvement through the FCM model occurred due to the opportunity for becoming responsible for their own learning and reflective upon the process itself. These features might also inspire strong beliefs in students' own learning potential. Additionally, the time used for classroom learning was mostly quality time spent maximizing learning outcomes when compared to time spent in traditional classrooms. In the flipped classroom, unlike the conventional, non-flipped classroom, about most of the classroom time was dedicated to activities such as discussions, pair work or group work that required students to be involved in and to perform communicative tasks through authentic communication.

The current study highlights that in the course of technology integration into teaching, the utilization of the FCM does indeed help learners to develop their potential for learning. This advantage was shown by the findings of statistically significant differences in students' beliefs in their own learning potential between the students in flipped and traditional classes. The findings of the present study are consistent with Sparks (2013) and Walker et al. (2011) as this study has also found that the FCM enhances the learning potential of students. One probable explanation for this finding is that in FCM, learners co-operated with each other and became actively involved in authentic communicative learning tasks. According to Strayer (2012), the gains of the flipped classroom can be attributed to the opportunities for learners to co-operate in the execution of tasks and create connections through interactions. Additionally, when students have no control over management of learning multimedia content, their cognitive abilities may be stretched. On the contrary, receiving learning content prior to the class and studying it ubiquitously might have allowed learners to monitor their own learning and adapt the pace contributing to better learning outcomes. In addition to this, as Hamdam et al. (2013) emphasized, learners in a FCM “explore topics in greater depth and creating richer learning opportunities” (p. 5). This personally meaningful learning context might inspire a strong belief in achieving success in fulfilling tasks, which in return can cause improved self-efficacy. This study has yielded similar findings to the study by Kurt (2017) In Kurt's study, the FCM resulted in higher level of self-efficacy of pre-service teachers who took a classroom management course relative to their counterparts taking the same course in a traditional classroom model. There was no mention of significant gender difference, but it was overall remarked that self-efficacy could improve through the FCM.

Another noteworthy observation of this study is that female learners' self-efficacy significantly differed after the intervention of the FCM when compared with their male counterparts. A possible explanation for this finding is that the activities in the FCM might have improved the cognitive and social involvement of students and encouraged them to collaborate more with each other (not only females with females but females

with males) compared to the traditional classes. Interaction and communication with others might have challenged Iranian stereotypes that females are behind males in believing in their potential and abilities to complete given tasks with success. As regards to gender, this study mostly contradicts to the study by Minaz et al. (2018) whose study revealed that no statistically significant gender difference was found within the groups (experimental and control) while the experimental group participants both male and female out performed their counterparts in the control group. However, only females in experimental group had a statistically significant difference in self-efficacy before and after the intervention. It also contradicts with the study by Elian and Hamaidi (2018), which found that there was no significant difference in the means of achievement scores across gender with the intervention of flipped classroom strategy. It is interesting that these two studies are from a similar cultural context namely Iranian, but yielded different findings in that in those cases the FCM did not make a difference on self-efficacy or reveal any significant gender differences. Additionally, this study does not agree with the studies by Chen et al. (2016) and Chen et al. (2019) which found no significant gender difference and observed that both genders exposed to flipped teaching performed equally well on academic achievement measures.

6 Conclusion

The current study presents an empirical study of an account of self-efficacy and gender in the flipped classroom design. When looking at the difference in self-efficacy before and after the intervention, students in the intervention group indicated an increase in self-efficacy as compared to their counterparts in the traditional classroom. This could be attributed to features of the FCM such as active learning, group discussions, collaborations, problem solving and so forth. In regards to gender differences, only female learners in the intervention group had a significant difference in self-efficacy before and after the intervention. This finding is in accordance with the findings of the study by Chiquito et al. (2019) where the results indicated that the flipped classroom strategy in an engineering course had a significantly greater impact on grades of female students when compared with of male students. The authors explained their observation with the claim that the FCM may fit best to females. Although this claim can be argued in the field of engineering where a mostly male area entails underrepresentation of females, violating inclusiveness and marking one gender as a best receiver of the intervention over the other may reflect an incomplete understanding of the effects of equal gender representation in the classroom. Gender differences noted on intervention effectiveness are mostly obscure and further studies are warranted to better understand actual effects.

It should also be noted that the previously mentioned stereotype threat identified by Steele (1997) might not be the case when the FCM was harnessed in teaching EFL. This is likely to be the case in the context where female students were behind in the educational arena due to social values or the roles imposed upon them. This study reveals that a flipped classroom application in a patriarchal society structure can be effective in countering the bias and stereotypes toward female learners. Especially in regards to technology, males are regarded as having more positive attitudes toward self-efficacy and web use as a learning tool than females (Tekinarslan 2009). However, in

this study, males outperforming their female peers was not the case, rather the females outperformed their male colleagues. This indicates that the FCM can correct the bias against females and inspire them to believe in their potential for learning when provided opportunity. What is important with this finding is that the female student's self-efficacy factor might have improved through the autonomous learning opportunities presented in the FCM. However, as a model for teaching, success requires a model that benefits all students and is essentially gender neutral. Why male participants in this study did not have significantly different perceived self-efficacy could be due to a higher baseline self-efficacy. While the FCM may have been an effective teaching model, it did not come across as something extraordinarily novel and attractive such as to make them believe that they have more untapped potential. The notable progress by the female students in this context could be viewed as a recommendation for the FCM to bring disadvantaged students on par with their peers. With regards to self-efficacy the improvement noted among female students may indicate that the FCM provided the students with more than expected opportunities for success or merely be a reflection of a lower than appropriate baseline self-efficacy. Further research in this regard is warranted.

This study was conducted with a small number of participants. The sample size was small with only 58 participants divided as 27 female and 31 male students. Similar research design should be carried out with a larger sample in General English and skill teaching courses so that the outcomes can be generalized. In addition, the use of various data collection methods such as scores of achievement tests, instructor's observation notes, classroom video transcriptions, and interview may provide a more nuanced and richer evaluation of the viewpoints and gains of the participants. Moreover, it is recommended to recognize students' engagement in technology mediated instruction outside the classroom and to make essential preparations before implementing the FCM.

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