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A Quasi-experimental Study of Chinese University English Learners' Engagement in a Flipped Classroom

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Abstract: The demand for improving the quality of undergraduate education in China has prompted the nation-wide implementation of blended teaching approach, including flipped classroom. However, there is a lack of studies examining the effect of flipped language classroom on students' behavioral, emotional, cognitive, and social engagement. To address this issue, this study examined the effect of a flipped English classroom on student engagement by adopting a pretest-posttest quasi-experimental design with mixed methods in a Chinese university. Data from 492 participants were collected and the results of the exploratory factor analysis (EFA) indicated that the instrument for measuring English learners' engagement was sufficiently reliable. The results of the analysis of covariance (ANCOVA) showed that students in the experimental group (n = 268) reported significantly higher behavioral, emotional, cognitive, and social engagement than students in the control group. Students' perceptions of their before-class and in-class learning experiences and their attitudes towards the flipped approach revealed some evidence for how and why flipped classroom could benefit language learners' engagement. The findings shed some light on future course design and the implementation of blended learning approach.

Keywords: Flipped classroom, engagement, English learners, quasi-experiment, ANCOVA

1. Introduction

Emerging technology applied to online learning has accelerated the adoption of blended learning in higher education. In China, the Ministry of Education issued the *Education Informatization 2.0 Action Plan* in 2018, aiming at developing a learner-centered education ecology integrated with information technology (Yan & Yang, 2020). Accordingly, Chinese universities are encouraged to build smart classrooms and adopt blended learning, such as flipped classroom approach to improve the quality of undergraduate education. Although the effect of flipped classroom has been widely discussed and examined since it gained its popularity in the United States (Bergmann & Sams, 2012), empirical research in the field of English language teaching remains limited (Turan & Akdag-Cimen, 2020), and there is a need for more rigorous research design to explore the effect of flipped classroom on students' learning outcomes (van Alten et al., 2019). To address this issue, this study conducted a quasi-experiment with mixed methods in an English course at a Chinese university to examine the effect of flipped classroom on university English learners' engagement.

2. Literature Review

2.1 Flipped Classroom

Flipped classroom is defined as a learning model in which lessons are delivered outside the classroom using instructional videos, leaving the in-class time for problem-solving and other activities (Bergmann & Sams, 2012). Since the work of Bergmann and Sams (2012) and other pioneers, flipped classroom

has been gaining momentum and a vast number of studies have been conducted to investigate its pedagogical design, effectiveness, and influencing factors. A list of systematic reviews also emerged in recent years in an attempt to determine its advantages and challenges in various disciplines (e.g. Akçayır & Akçayır, 2018; O'Flaherty & Phillips, 2015; van Alten et al., 2019). Generally speaking, flipped classroom has been identified as an effective approach to improving teaching efficiency, students' satisfaction, engagement, and learning performance. Meanwhile, the successful implementation of flipped classroom also depends upon a wide range of factors concerning the out-of-class and in-class learning design (Lo, Hew, & Chen, 2017).

In the field of English language teaching, Turan and Akdag-Cimen (2020) conducted a systematic review and found that existing literature mostly showed positive effect of the flipped pedagogy. However, they pointed out that more experimental studies were needed and more qualitative findings were necessary to offer insights into the use of the flipped model in English classrooms. Since "flipped classroom" was introduced in China's *Guidelines on College English Teaching*, there has been a sharp increase of studies on flipped language classroom in Chinese universities (Qu, 2019). By conducting a content analysis of 42 Chinese research articles on flipped language classroom in higher education from 2014 to 2018, Qu (2019) suggested that there had been insufficient research on Chinese language learners and teaching assessment. Jiang et al. (2020) also maintained in their review that prevailing research was outcome-oriented without sufficient investigation into learners' perceptions and learning processes. Therefore, more rigorous experimental design and more qualitative inquiries are needed.

2.2 Engagement

Primarily a concept for understanding dropout and school completion (Finn, 1989), *student engagement* was defined by Christenson, Reschly, and Wylie (2012, vi) as "effortful learning through interaction with the teacher and the classroom learning opportunities". It has been widely acknowledged in the field of education that engagement is "the direct (and only) pathway to cumulative learning, long-term achievement, and eventual academic success" (Skinner & Pitzer, 2012, pp. 22-23), and has been recognized as a multifaceted construct. Based on extensive literature review, Fredricks, Blumenfeld, and Paris (2004) classified the existing measures of engagement into three dimensions: behavioral, emotional, and cognitive. According to Fredricks et al. (2016), behavioral engagement has been measured with items about attention, participation, concentration, and homework completion; emotional engagement is conceptualized as the presence of positive emotional reactions to teachers, peers, learning content, and classroom activities; cognitive engagement is defined in terms of using deep learning strategies, persistence, and self-regulated learning. In recent years, a fourth dimension – social engagement – was proposed to stress the importance of social interactions in learning, which was supported by Fredricks et al.'s (2016) qualitative study on math and science engagement. Meanwhile, Philp and Duchesne (2016) also theorized engagement as a multi-dimensional construct with the same four dimensions for second and foreign language learners. However, compared with the extensive research on engagement in educational psychology, there has been limited discussions of engagement among language educators. Instead, they traditionally focused more on *motivation* when examining language learners' commitment (Mercer & Dörnyei, 2020). Yet as the outward manifestation of motivation (Skinner & Pitzer, 2012), engagement offers a more practical approach to involving students in their language learning, especially in today's digital age where too many distractions might interfere with learners' effort even if they were motivated (Mercer & Dörnyei, 2020).

So far, many studies have explored whether flipped classroom could promote university students' behavioral, emotional, and cognitive engagement in various disciplines, such as in educational technology (Elmaadaway, 2018), computer science (Subramaniam & Muniandy, 2019), and language learning (Jamaludin & Osman, 2014), and yielded overall positive findings. However, these studies didn't adopt a pretest-posttest approach and only compared data after the flipped experiment. Moreover, some research on engagement in flipped English classrooms used the term "engagement" in a more general sense, representing students' active involvement with materials or activities without investigating it under the four-dimensional framework (e.g. Alsowat, 2016). Consequently, more pretest-posttest quasi-experimental research investigating the effect of flipped classroom on English language learners' behavioral, emotional, cognitive, and social engagement is needed, together with an attempt to understand students' perceptions of their flipped English learning.

3. Research Questions

This study aims at exploring an effective flipped approach to promoting English language learners' engagement by conducting a quasi-experiment in a university English course. Based on the literature review, two research questions were proposed:

(1) Can flipped classroom significantly improve university English learners' behavioral, emotional, cognitive, and social engagement?

(2) How did students in the flipped language classroom perceive their learning experiences?

4. Overview of the Research Design

This study was carried out in a freshman English course at a northern Chinese university in the fall semester of 2019. It was a compulsory course designed to improve non-English majors' general English skills. The course followed a textbook-based syllabus with units of various topics, such as the Internet, Ways of Learning, etc. In the course, students should learn articles of different styles and practice their listening, speaking, reading, and writing skills. Various technological tools such as multimedia system, smartphone applications, and online learning platforms were used to support a blended learning approach. The 16-week course lasted for 90 minutes each week with a class size of 60-70 students.

Adopting a pretest-posttest quasi-experimental research design, four classes were assigned to the experimental group, and another four classes to the control group. Due to management challenges, it was unfeasible to assign a single instructor to all the classes. Consequently, the two groups were taught by two female instructors with similar age, educational background, and teaching ability. Previous students' anonymous ratings of the two instructors were retrieved from the educational administration system and compared concerning their teaching skills, professional knowledge, class organization, and the way they inspired and encouraged students. No significant difference was identified.

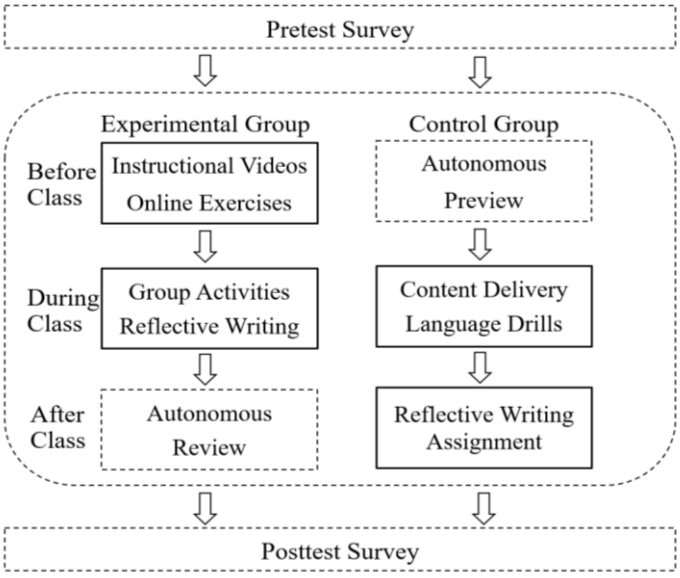

Figure 1. Procedure of the Teaching Experiment.

This study followed the design principles of flipped classroom proposed by Lo et al. (2017) and developed a flipped model for the English course. As shown in Figure 1, the experimental group adopted a flipped classroom approach, where the textbook-based instructions, such as analyzing the reading passages and explaining new words were moved to the *Blackboard* platform in the form of two 10-15 mins videos. The two instructors created the videos based on Mayer's (2014) cognitive theory of multimedia learning (CTML) and a previous survey on students' preferred elements in instructional videos. Students should watch the videos and complete the online exercises before attending the English class. During the class, the instructor first checked students' understanding of the pre-class knowledge with a small quiz and answered students' questions, then arranged learning activities such as

reflective writing aimed at cultivating students' critical thinking. The control group followed the traditional blended teaching approach, where the instructor delivered the textbook-based knowledge and organized language drills and quizzes during the class, and left the reflective writing as after-class assignment. For both groups, digital courseware created by the textbook publisher was provided online to assist students' autonomous preview and review. Both instructors made it clear to students that class attendance and out-of-class assignments were mandatory, and their performance in class quizzes and activities accounted for 10% of the final grade. The two instructors also tried to observe the principle that the before-class learning load assigned to the experimental group should not be significantly different from the after-class learning assignment of the control group, in an effort to reduce the possible effect caused by extra workload in the experimental group (Turan & Akdag-Cimen, 2020). To examine the effect of flipped classroom on student engagement, two identical sets of survey were administered at the beginning and the end of the semester.

5. Method

5.1 Participants

The participants were 541 first-year undergraduate students from eight English classes, with four classes assigned to each group. Their English level was equivalent to CEFR B1-B2. Students of the two groups were from the same school (indicating same major and similar College Entrance Examination scores). The two groups of students attended the English course at the same time each week. All the students were engineering majors and they took the College English Placement Test when they entered the university. The scores of the test showed no significant difference between the two groups. Altogether 492 students completed both the pretest and posttest survey, with 268 students (77.6% males) in the experimental group and 224 students (69.2% males) in the control group. The average age of both groups is 18. According to the pretest survey, only 3.7% students (n = 10) in the experimental group and 4% students (n = 9) in the control group reported having prior learning experience in flipped classroom.

5.2 Instrument

The English Learning Engagement Scales (ELES) was used in this study to measure students' engagement in their English language learning. It was adapted from the Math and Science Engagement Scales developed by Fredricks et al. (2016), including four dimensions: Behavioral, Emotional, Cognitive, and Social Engagement. The items were modified by replacing "math and science" with "English". For example, when measuring students' emotional engagement, the original item "I look forward to math and science class." was modified to "I look forward to English class." All the items in the questionnaire were translated into Chinese by a professor of educational technology and an experienced English instructor and measured with a five-point scale, from 1 "I strongly disagree" to 5 "I strongly agree".

Besides the questionnaire, students from the experimental group were invited to post their flipped learning experiences on *Blackboard* at the end of the semester. The online instructions encouraged students to respond from three aspects: (1) their before-class learning experiences (including the quality of the online learning materials), (2) their in-class learning experiences, and (3) their perceptions of the flipped learning approach. This qualitative data was collected to triangulate the quantitative data by offering an in-depth understanding of students' learning processes and the effect of the flipped classroom on English learners' engagement.

5.3 Data Analysis

The quantitative data was analyzed using IBM SPSS 23.0. First, exploratory factor analysis (EFA) was performed to clarify the factors of the questionnaire, and the Cronbach's alpha was calculated to ensure the reliability of the instrument. Next, an analysis of covariance (ANCOVA) was employed to compare the engagement level of students in the two groups after the experiment. In terms of the qualitative data,

content analysis (Popping, 2015) was adopted using NVivo 11 to analyze students' comments posted on *Blackboard*. Two researchers first read through all the data and noted that most students' responses consisted of three distinctive aspects as guided by the online instructions, i.e. their before-class learning experiences, their in-class learning experiences, and their attitudes towards the flipped learning approach. Consequently, the researchers first identified a comprehensive set of themes until no new theme emerged in the data and developed the coding scheme under the three major categories. Then they coded the responses independently to ensure investigator triangulation. The inter-coder agreement was greater than 80%, indicating that the procedures were sufficiently reliable. The two coders resolved disagreement by reviewing the responses. Themes irrelevant to the research question were not listed.

6. Results

6.1 Exploratory Factor Analysis of ELES

Exploratory factor analysis with principal components and varimax rotation was conducted using the pretest survey data (n = 492) to clarify the factors. Items with factor loadings lower than 0.40 or with multiple cross-loadings were excluded. Altogether 14 items were retained in ELES and grouped into Behavioral Engagement (BE, 4 items), Emotional Engagement (EE, 3 items), Cognitive Engagement (CE, 3 items), and Social Engagement (SE, 4 items). As shown in Table 1, the factor loadings of all the items ranged from 0.59 to 0.86. The total variance explained was 68.46%. The Cronbach's alpha for each factor ranged from 0.77 to 0.85, and the overall alpha was 0.91, indicating good internal consistency of the questionnaire. Among the four factors, BE displayed the highest mean score (4.20, SD = 0.62).

Table 1. *Descriptive Statistics, Factor Loadings, and Cronbach's Alpha Values for the ELES (N = 492)*

Factors	Items	Factor Loadings	M	SD
Behavioral	Mean = 4.20, SD = 0.62, Cronbach α = 0.82			
BE1	I stay focused in the English class.	0.74	4.05	0.84
BE2	I put effort into understanding learning content.	0.78	4.33	0.70
BE3	I keep trying even if something is hard.	0.67	4.26	0.74
BE4	I complete my learning tasks on time.	0.74	4.18	0.81
Emotional	Mean = 3.51, SD = 0.86, Cronbach α = 0.85			
EE1	I enjoy attending English class.	0.86	3.42	1.03
EE2	I look forward to English class.	0.86	3.24	1.03
EE3	I go to the class with good expectations when I know what to learn.	0.64	3.86	0.89
Cognitive	Mean = 3.48, SD = 0.80, Cronbach α = 0.77			
CE1	I think about different ways to complete the English assignment.	0.68	2.96	1.06
CE2	I try to connect what I am learning to things I have learned before.	0.78	3.75	0.93
CE3	I try to apply what I have learned in the English class.	0.71	3.71	0.92
Social	Mean = 3.88, SD = 0.72, Cronbach α = 0.84			
SE1	I try to understand other people's ideas in English class.	0.59	3.89	0.81
SE2	I try to learn with others who can help me in English.	0.80	3.92	0.89
SE3	I cooperate with others in English class.	0.83	3.89	0.85
SE4	I share my ideas when working with others in English class.	0.79	3.79	0.92

6.2 ANCOVA Results of Student Engagement

To examine whether there was a significant difference in student engagement between the two groups after the experiment, an analysis of covariance (ANCOVA) was performed using the posttest scores of ELES as dependent variables, the pretest scores of ELES as covariates, and the teaching approach as an independent variable. The four factors of engagement in ELES were analyzed separately. The homogeneity of slopes assumption in ANCOVA was tested, and the results showed no significant interaction between the teaching approach and each of the engagement factors ("BE" $F = 0.061$, $p > 0.05$; "CE" $F = 0.008$, $p > 0.05$; "EE" $F = 3.798$, $p > 0.05$; "SE" $F = 0.115$, $p > 0.05$), indicating that the assumption was met. The detailed descriptive statistics and ANCOVA summary are shown in Table 2.

The results of ANCOVA indicated that students in the experimental group reported significantly higher scores in their engagement than students in the control group, including their BE ($F = 28.58$, $p < 0.001$), EE ($F = 24.79$, $p < 0.001$), CE ($F = 15.52$, $p < 0.001$), and SE ($F = 36.83$, $p < 0.001$). As shown in Table 2, the average pretest scores of BE in both groups were the highest among the four factors, suggesting that when students just entered university, they reported quite high behavioral engagement in their previous English classes. However, after one-semester English course in university, the adjusted mean of the control group's BE reduced to 3.67, and there was a slight decrease (adjusted M = 3.95) in the experimental group's BE. However, in terms of Emotional, Cognitive, and Social Engagement, the adjusted mean scores of the experimental group were all higher than its pretest scores, whereas there was a general decrease in the adjusted mean scores of the control group.

Table 2. *Descriptive Statistics of Students' Pretest and Posttest Scores and ANCOVA Summary of Students' Engagement*

	Pretest		Posttest		Univariate ANCOVA			
	M	SD	M	SD	M (adjusted)	SE	*F value*	η^2
Behavioral Engagement (BE)								
Experimental Group	4.12	0.65	3.92	0.61	3.95	0.036	28.58***	0.055
Control Group	4.31	0.58	3.71	0.66	3.67	0.039		
Emotional Engagement (EE)								
Experimental Group	3.39	0.85	3.78	0.73	3.82	0.041	24.79***	0.048
Control Group	3.64	0.86	3.57	0.77	3.52	0.045		
Cognitive Engagement (CE)								
Experimental Group	3.38	0.80	3.57	0.73	3.61	0.039	15.52***	0.031
Control Group	3.59	0.79	3.43	0.72	3.38	0.043		
Social Engagement (SE)								
Experimental Group	3.79	0.69	3.83	0.69	3.87	0.040	36.83***	0.070
Control Group	3.98	0.73	3.55	0.72	3.51	0.043		

Note. Experimental Group n = 268, Control Group n = 224. ***p<0.001

6.3 Students' Perceptions of the Flipped Classroom

Altogether 139 students in the experimental group posted their comments. Themes concerning students' before-class and in-class learning experiences, and their attitudes towards the flipped classroom were coded. The frequency and the translated answer example of the most representative themes relevant to the research question are presented in Table 3, which offered a qualitative understanding of the ANCOVA results.

To begin with, students in the experimental group generally spoke highly of the instructional videos. They commented that the videos were of high quality, offering thorough explanations of textbook knowledge, including new vocabulary and article understanding. They could easily access and review those videos. In addition, the before-class online exercises helped deepen their understanding of the learning content, allowing them to get better prepared before attending English classes. They considered the exercises to be easy to deal with, and some students suggested adding more exam-oriented exercises. In terms of in-class learning, students showed overall positive attitudes towards group activities, through which they engaged in topic-related discussions, writing tasks, and

group presentations. They noted that those activities had improved their collaborative and communicative skills. Most students reported that they enjoyed the learning process and could stay focused throughout the class. However, a few students pointed out that they were not accustomed to group activities. "*Why do I have to learn with others?*" One student commented. Some asked for more teacher's instructions on testing skills and English learning methods in class.

Table 3. *Students' Perceptions of the Flipped English Classroom (N =139)*

Theme	Frequency	Example
Before-class learning		
High quality instructional videos	101	*"The instructional videos are of high quality and interesting, with clear explanations of the textbook content."*
Helpful online exercises	54	*"The exercises helped deepen my understanding of the words and sentences in the textbook."*
Suggestions for improvement	32	*"Maybe the teacher could add more exercises relevant to the College English Test."*
In-class learning		
Rich and colorful	52	*"The group activities were rich and exciting. They not only enhanced the awareness of group cooperation, but also made the class more engaging."*
Efficient arrangement	34	*"The class was well-arranged. We first reviewed the textbook knowledge, then participated in topic-related activities. I could always stay attentive in the class."*
More instructions needed	21	*"I hope the class could provide more instructions on skills in English tests."*
Not all students were active	13	*"Some students were inactive in class, maybe due to their poor English skills or lack of interest in English learning."*
Attitudes towards the flipped learning		
Supportiveness and acceptance	63	*"I totally support this innovative approach. We have very few English classes now. If we just listen to the teacher lecturing throughout the class, the efficiency is very low."*
Improved autonomous learning	44	*"It (flipped classroom) allowed me to learn at my own pace and enhanced my autonomous learning."*
Improved motivation	32	*"The class provided more opportunities for us to express ourselves in English. I feel more motivated to learn English well."*
Changes in learning conceptions	26	*"This teaching approach has changed my understanding of English learning. Instead of passing exams, we are now learning English for communicative purposes."*
Challenges in adaptation	17	*"It took me almost a month to get used to this teaching approach."*

In general, most students acknowledged the value of the flipped approach. Although many of them mentioned that it was the first time for them to experience flipped classroom, they considered this approach as more effective in knowledge delivery and fostering students' active learning. The structured guidance on *Blackboard* and teacher's online support allowed students to learn at their own pace, which cultivated their autonomous learning. Some students mentioned that the flipped approach had changed their English learning conceptions – learning English was no longer simply for passing exams and getting a high score. Now they were more motivated to use English for communicative purposes. Despite the overall positive feedback, there were a few students struggling to adapt to the flipped approach. They said that they couldn't manage their time well and were always "*chasing deadlines*". Besides, many students expressed concerns about how to learn English well, as there were fewer English classes each week in university than in high school, whereas their major-related courses such as linear algebra and physics consumed much of their time and energy.

7. Discussion

This study examined the effect of flipped classroom on university English learners' engagement by carrying out a quasi-experiment in a Chinese university. The results of the EFA of ELES validated the survey instrument of English learners' engagement, and the ANCOVA analysis showed that after the experiment, students in the experimental group on average reported significantly higher behavioral, emotional, cognitive, and social engagement than students in the control group. The qualitative findings of students' overall positive attitude revealed some evidence that could explain and support the higher engagement level in the experimental group.

7.1 The Effect of Flipped Classroom on Behavioral Engagement

Students in the experimental group reported significantly higher behavioral engagement than students in the control group after the one-semester English course. This was consistent with previous findings that the flipped approach increased attendance and retention rate (Karabulut-Ilgu, Cherrez, & Jahren, 2018). It also proved that the mandatory requirement of pre-class learning and class attendance in the flipped classroom is necessary (He, Holton, Farkas, & Warschauer, 2016). However, the mean scores of students' posttest behavioral engagement in both groups were lower than those of their pretest. One possible explanation is that the participants might no longer treat English learning as the top priority after they entered into university, where they had only two hours of English classes once a week, and more major-related courses took up much of their effort. Under the circumstances, the average behavioral engagement of students in the control group reduced considerably, whereas the mean score of students' behavioral engagement in the experimental group didn't show significant change, indicating the effect of flipped classroom on maintaining students' attention and involvement in English learning. Meanwhile, it should be noted that the successful implementation of the flipped classroom relies on technological affordances and high-quality out-of-class materials (Akçayır & Akçayır, 2018). To engage learners behaviorally, the technological tools should be easy to use and accessible to all learners. And the instructor should manage students' transition to the flipped approach by demonstrating the learning process with technology and offering instant guidance and support.

7.2 The Effect of Flipped Classroom on Emotional Engagement

Students in the experimental group generally exhibited higher emotional engagement than students in the control group after the experiment, and their average posttest emotional engagement level was higher than that of their pretest. Most of them found the flipped class rich, colorful, and exciting, and they enjoyed attending the classes. Their comments revealed that although a few students took some time to adapt to this approach, most of them held supportive attitudes at the end of the semester and acknowledged its value in improving class efficiency and providing opportunities for communication. In many Chinese universities, the class size of the English course for non-English-major undergraduates was still quite large (60-70 students), and teacher-centered instructions took up much of the class time (Chen & Yu, 2019). Consequently, it was difficult for students in the control group to relate themselves to the teacher, the learning content, and their peers, which might lead to reduced emotional engagement. In comparison, students in the flipped classroom were more motivated with more opportunities to get involved in class activities. The result of the increased emotional engagement was in line with previous findings of increased student satisfaction with the flipped approach (O'Flaherty & Phillips, 2015).

7.3 The Effect of Flipped Classroom on Cognitive Engagement

Compared with students in the control group, students in the flipped classroom showed significantly higher cognitive engagement. Students generally spoke highly of the instructional videos and found them easy to understand and fun to watch, which might have better prepared them for higher-order learning activities in the class. Some of them commented that the course was well-organized, and they could stay attentive in class and apply what they had learned to group discussions and writing tasks, indicating deep learning strategies. From this perspective, clear guidance and explicit requirement from the teacher might have had some effect on students' self-regulation (Shyr & Chen, 2018). Previous

research has identified that failures in flipped classroom could be attributed to poor-quality learning materials or poorly-arranged classroom activities (Akçayır & Akçayır, 2018). Consequently, educators should carefully design the flipped course to cognitively engage students. To begin with, the quality of the instructional videos played a vital role for effective flipped learning. The video producer could conduct a needs analysis among students and observe Mayer's (2014) CTML in order to reduce learners' cognitive load. Next, exercises directly linked to the video content should be offered online to consolidate students' learning. Besides, a short and easy quiz checking students' understanding of the pre-class knowledge is encouraged at the beginning of the class. After that, learning activities that emphasize communicative and higher-order thinking skills could be carried out based on the pre-class knowledge. To sum up, to genuinely "flip" the classroom, the pre-class and in-class activities should be carefully integrated with clear guidance to foster students' cognitive engagement. The positive findings indicated that Lo et al.'s (2017) design principles for mathematics flipped classrooms that this study had followed might also apply to language classrooms.

7.4 The Effect of Flipped Classroom on Social Engagement

Students in the flipped classroom reported significantly higher social engagement than students in the control group. They had more opportunities to work with peers, share and understand each other's ideas through group activities. However, as freshmen who just got into university after the College Entrance Examination, some students still showed inclination towards exam-oriented teaching approach and demanded more teacher instructions in class. This finding echoed Webb, Doman, and Pusey's (2014) survey that students in the flipped group still clung to in-class teacher instructions. Therefore, a few of them were not accustomed to suddenly becoming the center of the classroom and remained passive in the face of classroom activities. Nevertheless, the qualitative results showed that the flipped classroom allowed students to gradually change their conceptions of English learning and accept the importance of enhancing their English communicative skills through collaborating with peers.

8. Conclusion

This study conducted a pretest-posttest quasi-experiment in a Chinese university English course and examined the effect of flipped classroom on student engagement. The results showed that the flipped language classroom has significantly promoted English learners' engagement. And students' comments on their learning experiences revealed some evidence for the positive effect of the flipped classroom. In particular, the results identified the crucial role of the quality of out-of-class learning materials and the integration of pre-class and in-class learning tasks in engaging students behaviorally, emotionally, cognitively, and socially. This research has contributed to the understanding of effective approaches to promoting students' engagement. The design principles followed by this study could apply to flipped classrooms of other disciplines, and also shed some light on effective organization of online learning or other blended learning model.

This study has several limitations. To begin with, all the participants were engineering majors in a Chinese university, so the findings may not be fully generalizable. Besides, the English instructors in the two groups were not the same. Even though no significant difference was identified in their teaching style and professional skills and they kept their teaching content in sync, some of their individual characteristics might still lead to differences in student engagement. Future quasi-experimental study should ensure the same instructor for both groups. Furthermore, students' English proficiency after the experiment was not compared due to the lack of a validated large-scale English test. Studies examining the effect of flipped classroom on students' higher-order thinking skills and communicative language skills are still greatly needed.

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