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Flipping the Classroom and Tertiary Level EFL Students' Academic Performance and Satisfaction

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This study attempts to measure the possible impact that flipped teaching has had on the improvement of learners' academic performance, as well as their satisfaction in a cross-cultural communication course. A total of 90 students learning English as a foreign language (EFL) were assigned to three conditions: a structured flipped classroom using a WebQuest active learning strategy, a semi-structured flipped classroom, and a traditional classroom. Results showed that the structured flip lessons were the most effective instructional intervention in improving participants' academic performance, followed by the semi-structured flip lessons and the traditional lessons. Data collected from the questionnaire and interviews indicated that learners were more satisfied with the structured flip lessons than the semi-structured flip lessons. Given the positive results, the present study argues that the flipped classroom model could be a useful and promising pedagogical approach in EFL teaching. However, additional research is needed to contribute to the knowledge base of this approach across disciplines.

Keywords: academic performance, English learning, flipped teaching, WebQuest

Introduction

As traditional teacher-fronted instruction and lecture-based learning—prevalent in content-based courses in Asian English teaching contexts—often leads to students become passive in the classroom, emphasis has now been placed on fostering reforms for EFL teaching (Webb, Doman, & Pusey, 2014). This scenario calls for implementation of new teaching methods, such as flipped teaching, to enhance EFL instruction (Teng, 2017a). The call for flipped teaching is concomitant with the development of technology. The technological development has enabled the amplification and duplication of information at an extremely low-cost. In addition, many free learning materials have been provided online for learning activities. In this connection, it is assumed that traditional classroom activities, such as lectures, labs, homework, and exams, can be moved to the online technology, with which students can study anytime outside the classroom. This positive impact of technology growth has influenced the development of instructional technology in education and replaced the use of the blackboard with online video lectures, and hence, we see calls for flipped classrooms.

Related Literature Review and Theoretical Frameworks

Although the term "flipped teaching" is relatively new in education, the shift in emphasis toward a flipped classroom is not new (Mazur, 2009). Several corresponding terms, such as inverted classroom (Strayer, 2012), upside-down classroom (Baker, 2000), flipped classroom (Irulappan, 2012), and inverted learning (Davis, 2013) have also been used to identify this innovative approach.

Flipped teaching is regarded as a pedagogical approach to blended learning in which the typical activities of classroom lectures followed by homework as part of the traditional teaching procedures are flipped, and often supplemented or integrated with instructional videos (Enfield, 2013; Kordyban & Kinash, 2013; Watson & Reigeluth, 2008). Flipped teaching is rooted in constructivism and problem-based theories of learning. It involves reversing the traditional structure of the classroom with the goal of promoting higher-order thinking and learning in class (Lage, Platt, & Treglia, 2000), e.g., a lecture capture or video is made available to students for viewing and learning beyond the classroom, allowing more classroom time for group discussion, activities, and clarifications that can enhance the application of previously learned knowledge. Bishop and Verleger (2013) modelled flipped classrooms as a system consisting of somewhat disjoint components: interactive group learning activities inside the classroom, and direct computer-based individual instruction outside the classroom.

Based on self-determination theory (Deci & Ryan, 2002), students' motivation is categorized into two main types: intrinsic and extrinsic motivation. Intrinsic motivation refers to those actions that individuals engage in as they are inherently interesting, fun, exciting, and enjoyable, while extrinsic motivation means individuals' engagement in actions for gaining reward or avoiding punishment. The flipped classroom's success is dependent on whether students are willing to undertake substantial out-of-class work—and being motivated to do so independently (Kim, Kim, Khera, & Getman, 2014). Based on cognitive load theory (Sweller, 1988), the flipped classroom's success relies upon students' opportunities to do the lower levels of cognitive work (gaining knowledge and comprehension) at home or outside of class, and to concentrate on the higher forms of cognitive work (application, analysis, synthesis, or evaluation) in class via hands-on activities or practice. This model contrasts with the traditional model in which the students practiced the lowest levels of remembering and understanding in the classroom by listening to the instructor's lecture while other levels were practiced outside the class such as doing homework or doing nothing at all.

Computer-assisted language learning (CALL) is an increasingly important educational technique that has been widely embraced in the foreign language education community. With the ubiquity of the Internet and computers, the integration of CALL into the language classroom is important as teachers struggle to stay in tune with students' needs. Flipping the classroom is a viable answer to the problem of how to best integrate technology into the classroom and provide some outside of it as well. Hence, flipped teaching has recently received intensified attention in the field of foreign language education. When applied to teaching EFL, flipped teaching can be understood as a means to promote or enhance communicative language teaching (CLT) methodologies by making technology more relevant to the learning experience. During the past few decades, CLT has been found to motivate students to become more responsive and more engaged in lessons. However, Doman (2016) argued that CLT is limited in that it fails to incorporate one of the most important educational tools—the computer. In response to this limitation, alternative pedagogies, such as flipped teaching, have been introduced. More research in this area still needs to be conducted, as this would help break new ground for EFL teaching, particularly at the university level.

Research on applying the flipped classroom model at the university level has revealed two common themes. First, the most common studies conducted on the flipped classroom explored participants' increased performance. For example, Baranovic (2013) invited first-year students attending a university in the United States to attend a flipped English writing course. He replaced traditional lectures with creative writing-style workshops, encouraging a collaborative recursive writing process and stimulating creative thinking among students. Results showed that the course benefitted students of all writing levels, in particular, nonnative English speakers. Hung (2015) invited 75 EFL learners attending a Taiwanese

university to take a communicative English course. Results revealed that students who received flipped lessons in the form of WebQuest sessions experienced significant improvements in academic performance. Possible reasons might be due to the instructional videos and other forms of pre-class materials organized and distributed by WebQuest, which provided learners with the required competencies to prepare for in-class participation. Since students were given more opportunities to learn from and evaluate one another in class, this might have encouraged them to study the materials more thoroughly than a simple homework requirement would have.

A second theme of publication centered around an abundance of articles which indicate positive student perceptions toward flipped teaching. For example, Hahn (2012) used video lectures to flip a literacy course. Students were provided with a choice of how to access course materials: video lectures or printed reading materials. The data collected from a survey showed that a majority of the students used video lectures and found them helpful. Likewise, Touchstone (2015) divided learners into two groups: flipped classroom students and traditional classroom students. The group representing the flipped classroom approach listened to or watched lecture material at home and then worked on their assignments during class time. The group having a traditional approach undertook textbook reading at home prior to attending classroom lectures. Students in the flipped classroom reported that they learned more and enjoyed the course more than those in a traditional classroom. In a similar vein, Webb, Doman, and Pusey's (2014) study involved 150 EFL students attending a university in China. Questionnaires administered to students revealed that although some students still preferred traditional teacher-fronted instruction, most of the flipped students became accustomed to it over time and appeared more comfortable with this new approach. Student interviews also revealed that students found the teacher to be more of a friend in the flipped paradigm, someone they could connect with both online and in class at any time, any day of the week. Furthermore, teacher participants reported that the flipped teaching approach should be recommended as an effective means for promoting creativity and opportunities for higher-order learning in the classroom.

The reviewed studies suggest that a flipped approach led to an improvement in academic performance. However, it remains an open question whether similar increases in grades would have been achieved in other subjects (e.g., an EFL cross-cultural communication course) taught using a flipped approach. In addition, reports of student perceptions were generally consistent between the studies; positive overall, with a small number of students who were dissatisfied with the change from a traditional to a 'flipped' approach. However, we need data triangulation of survey and interviews, which will help us understand learners' attitudes and feelings toward flipped teaching in a holistic manner.

Purpose of the Study and Research Questions

Despite the increased emphasis on flipped teaching in education, empirical validation across contexts is insufficient to yield conclusive findings. Therefore, there exists a need to expand flipped teaching into higher educational settings for teaching EFL students. We intend in this paper to determine the effects of the flipped classroom approach on the success of Chinese students majoring in English. Research questions were addressed as follows:

1. To what extent do participants experience improvement in academic performances due to the structured flipped classroom method, semi-structured flipped classroom method, or traditional classroom method?
2. What attitudes are reported by participants toward their learning experiences in each format?

Method

Research Design

The present study aimed to examine the impact of flipped teaching on learners' academic performance and satisfaction levels. The independent variable was the flipped classroom approach, which includes three different formats of instructional design: structured units of flipped classroom (Experimental Group One, EG 1), semi-structured units of flipped classroom (Experimental Group Two, EG 2), and a traditional classroom without flipped teaching (Control Group, CG). The two dependent variables include the learners' academic performance and attitudes toward the chosen instruction medium. The first dependent variable was measured by end-of-lesson academic assessments. The second dependent variable was measured by post-experiment questionnaires and semi-structured interviews. In this regard, both quantitative and qualitative data were analyzed for the present study to provide insights into the EFL students' flipped classroom experiences.

Participants

A total of 90 students—50 females and 40 males—aged 18-20 years old, attending three classes at a university in China, were invited. This was a medium-sized university with a student population of approximately 13,000. This university was chosen for the study for convenience. In addition, the English department allowed certain sections to be taught with the flipped classroom method and other sections to be taught with the traditional method. Participants were English majors who had been studying English for at least six years. These participants were first-year university students, who were taking a cross-cultural communication course during the study. This course was selected because it included a large number of sections and students, and it was representative of a robust, challenging course with broad content and deep understanding and thinking required. They received two 40-minute class periods per week, in an audio-visual classroom wherein each student was allotted a computer.

The total number of students in the three classes was originally 124, which was reduced to 90 after selection. The selection criteria were based on the National Matriculation English Test (NMET) score of each student. Administered by the Ministry of Education of China, the NMET is a reliable test that measures English proficiency of high school students who seek admission into university programs. The maximum possible score for the NMET is 150 points. For the current study, the NMET results showed that the 90 participants selected were intermediate English language learners (M=102.34; SD=1.34). There were no significant differences among the three groups in terms of English proficiency level (p =.78, n.s.). The 90 participants were randomly and equally divided into three groups. However, students were not informed of which method of instruction they would receive.

Based on a voluntary and random basis, three English teachers were responsible for giving instructions, with each one responsible for one group. All three female instructors possessed a master's degree in English education and had at least 10 years of experience in teaching college English. The author, who was familiar with the flipped classroom model, worked as a course coordinator. All instructors met every week for a coordination meeting administered by the author, which ensured that the groups were identical in terms of learning content, classroom activities and homework. This could also help the teachers to reach a consensus when assessing homework completed by students in the three groups. All instructors responsible for flipped teaching were acquainted with the flipped classroom model through meetings and collaborations with the author prior to the study. Although the instructor responsible for traditional teaching did not receive any training regarding the flipped teaching, she was familiarized with what has been taught in the other two groups. The author observed two lessons in each of the three groups at the beginning, middle, and end of this course, which ensured adherence to the implementation of instructional methods. Ethical consent from students, teachers and the school were obtained.

Instructional Design

"Cross-Cultural Communication" is an elective, 10-week, basic course in the first-year curriculum that aims to help non-English major students become familiar with the usage of English in social life, develop functional language, progress in appropriate usage of vocabulary and complex sentences, and promote communication in English in different cultural situations. This course covered four themes: (1) cultural differences on politeness between China and the West; (2) differences in tea-drinking culture between China and the West; (3) differences in food culture around the world; and (4) cultural differences in body language.

All of the flipped classroom sections used the same instructional online videos. The flip instructors, along with the course coordinator, created online videos (vodcasts) of their lectures. This resulted in 16 video lessons with an average run-time of 20 minutes each. They were created using Camtasia screen capture software, a web cam, and a USB microphone. The images were captured using an Ipevo Ziggi document camera, and audio was captured with a USB microphone.

All groups were assigned the same assignment and were selected by the course coordinator and the three instructors. The only difference was that for the traditionally taught group, the problems were assigned as traditional homework to be completed outside of class time. The assignments for the flipped groups were completed in class. The rationale for distinguishing the structured class (EG1) and semi-structured class (EG2) (i.e., distributing in-class materials before the class and in class) was based on Hung (2015).

Learners assigned to EG1 received structured flipped classroom instruction (WebQuests plus online videos). they read all materials through WebQuests, viewed online videos, and took notes before attending class. Students then worked in class on inquiry-based assignments. For the present study, four WebQuests were created through QuestGarden (http://questgarden.com), an online authoring tool and hosting service for the creation and sharing of WebQuests. As an inquiry-based approach to learning, WebQuest provides an authentic, technology-rich environment for problem solving, information processing, and collaboration. This inquiry-based approach to learning involves students in tasks that make effective use of Internet-based resources or teacher-distributed materials. Learners are provided with materials, as well as opportunities for deep thinking including discussion, critique, persuasion or debate, which are essential elements required for cross-cultural communication. For example, the teachers can set up a group page through this website, which can be used as an interactive platform by learners to provide feedback to each other, while developing new WebQuests. Suggested as an effective method in flipping a classroom for EFL learners (Hung, 2015), WebQuests have been applied as an active learning strategy to organize relevant learning materials systematically. This strategy has motivated students to inquire into web-based materials (Godwin-Jones, 2004; Halat, 2008), and has been promoted as an effective method in teaching the English language to learners (Sox & Rubinstein-Avila, 2009).

Learners in EG2 assigned to the semi-structured flipped classroom used the aforementioned videos as a learning tool. The affordability and effectiveness in supporting the flipped classroom were the two key factors that contributed toward the inclusion of online videos in the semi-structured flipped classroom. In terms of material delivery, in EG1, in- and out-of-class learning materials were organized in the QuestGarden format, and all the materials were delivered to the students before each lesson. In EG2, out-of-class learning materials were printed and distributed to the students before class, while in-class learning materials were printed and distributed to the students in class (semi-structured). During classroom time, EG1 worked on inquiry-based assignments and homework, wherein teacher and students worked in a collaborative manner, the instructor provided assistance, and students could ask questions directly. EG2 students worked on assignments individually during class.

Learners in CG received traditional instruction. They attended lectures, with similar contents of the same mini-lectures that had been recorded for the flipped classroom groups. The instructor printed and distributed materials that were identical with those in EG1 and EG2 at an appropriate time during class. These materials were used as a supplement to teachers' lectures. Students then reviewed the materials and

completed their homework at home. Table 1 presents the differences among the three groups in their respective structures and the means of delivering learning materials in each of the structures.

TABLE 1
Overall Differences for the Three Formats

	EG 1	EG 2	CG
Flip structure	Structured flipped classroom	Semi-structured flipped classroom	Non-flipped classroom
Flip tool	WebQuests + Online videos	Online videos	None
Material delivery	In- and out-of-class learning materials were organized in the QuestGarden format. All the materials were delivered to the students before each lesson.	Out-of-class learning materials were printed and distributed to the students before class. In-class learning materials were printed and distributed to the students in the class.	In- and out-of-class learning materials were printed and delivered in an appropriate time during in-class activities.
Before and after class	Students watched online videos and read materials through WebQuests	Students watched online videos and read out-of-class learning materials	Students reviewed learning materials and completed assignments.
In class	Students worked on inquiry-based assignments.	Students read in-class materials and worked on assignments	Students listened to teacher's lectures and read materials.

Procedure

This experiment was carried out over a period of 10 weeks. Week one was the preparation phase. During this phase, the learners in EG1 received an orientation with regard to the use of WebQuests and online videos, while the learners in EG2 received an introduction to the online videos. The learners in CG received an introduction to this cross-cultural communication course.

The implementation of flipped teaching took place from week two through week nine. The implementation covered four themes, as listed previously. An academic assessment was conducted for each of the themes. Each theme spanned four 40-minute class periods, two periods per week, for two consecutive weeks. The last period was allocated for overall assessment of academic performance, with additional time being added when more was necessary.

The self-reflection phase was held in the tenth week. During this week, all the participants were asked to complete a questionnaire, while some learners from each group were invited to take follow-up interviews. Questionnaires and interviews were administered by the respective instructor. These assessment measures are described next.

Measures

Academic assessment

This assessment, immune from variations in pedagogical design, included three facets: learners' comprehension of the course content (30%), comprehension of the distributed learning materials (30%), and learners' overall performance of an oral presentation on a given topic related to cross-cultural communication (40%). The Cronbach's alpha for learners' comprehension of the course content, comprehension of the distributed learning materials, and learners' overall performance of an oral presentation were .71, .73, and .72, respectively. The items for the first facet were developed from the course content, which were taught in the three groups. The items for the second facet were developed

from the learning materials, which were distributed to all the learners in the three groups.

The first two assessments were multiple-choice comprehension questions and were scored by the author. For example:

> Language is accompanied by a continuous flow of nonverbal communication, which
> involves not only ____ but also ____ and _____ (C)
>   A. tone, gaze, posture   B. voice, face, body
>   C. pitch, gaze, gesture   D. pace, distance, touch

The focus of the first two assessments was to measure a student's understanding of the intercultural content of the course. The last assessment was scored by two experienced raters, who were not teaching the three groups. The focus of the last assessment was to measure language proficiency, particularly in presenting topics related to cross-cultural communication. The rubrics for scoring the oral presentations were designed by the author based on negotiation with the raters. When disagreements in scoring occurred, final decisions were made on discussions. The maximum possible score for each theme assessment was 100 points.

Questionnaire and interviews

A 12-item questionnaire adapted from Hung (2015) was used to explore participants' attitudes toward the learning conditions (see the results section for the questionnaire), and it was administered in week 10. Structured along the lines of a four-point Likert scale (strongly disagree: 1, disagree: 2, agree: 3, strongly agree: 4), the questionnaire aimed to gauge participants' perceptions of different outcomes from each teaching medium selected for the study. Cronbach's alpha for this questionnaire was .71.

Subsequent to the questionnaire response session, students from each group were invited to attend follow-up interviews. Interviews cover three important aspects of learners' motivation. These aspects classify the students' responses to the classroom pedagogy: (a) Autonomy: The student feels in control and independent. (b) Competence: The student feels competent to master the knowledge, skills and behaviors necessary to be successful in a given social context. (c) Relatedness: The student derives a sense of belonging to a social group in a given context (Abeysekera & Dawson, 2015). A total of 30 students, with 10 randomly selected from each group, attended the interviews. These interviews were conducted on a one-on-one basis, and each interview lasted approximately 20 minutes. The interviews were conducted in Chinese because they indicated that using their native language could help them better express their opinions. The interviews were audio-recorded for subsequent transcription and analysis.

Data Analysis

The quantitative data—academic assessment and questionnaire responses—were analyzed using the SPSS 19.0 statistical software. The analysis of variance (ANOVA) was applied to examine any group differences with a significance level of 0.05. The F-ratios and p-values were determined to see if there were statistically significant differences between and among the groups (Field, 2005).

The qualitative data—interview transcripts—were coded on the basis of thematic analysis. As the procedures for interview data analysis mainly included grouping verbal responses into categories according to the emerging themes, thematic analysis was appropriate (King & Horrocks, 2010). Based on the thematic analysis, the author examined and coded the data. Five themes emerged from the interview data.

Results

Academic Performance

The first research question aimed to determine whether flipped teaching had an impact on the learners' academic performance. Table 2 provides descriptive statistics of each group's academic assessments.

TABLE 2
Descriptive Statistics of Each Group's Four Lesson Assessments

Group	N	Assessment 1		Assessment 2		Assessment 3		Assessment 4	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
EG1	30	75.29	4.56	81.35	5.15	85.63	5.04	90.15	5.89
EG2	30	70.14	5.15	74.15	5.35	78.85	5.85	83.25	6.15
CG	30	65.36	5.09	66.75	5.76	68.15	5.74	69.14	5.97

The statistics for assessment of each theme shown in Table 2 revealed that EG1 had the highest score, followed by EG2 and CG. The ANOVA results showed significant differences in the mean scores for the academic performance of the three groups: Assessment 1: ($F(2, 80) = 12.31$, $p <.05$; Assessment 2: ($F(2, 80) = 13.42$, $p <.05$; Assessment 3: ($F(2, 80) = 16.31$, $p <.001$; Assessment 4: ($F(2, 80) = 17.62$, $p <.001$. Post-hoc Tukey's tests showed that EG1 significantly outperformed both EG2 ($p < .05$) and CG ($p < .001$), and that EG2 also outperformed CG ($p <.05$). This result was consistent across the four assessments. This provided evidence that, in general terms, the learners in the flipped classroom achieved better results in academic performance than their counterparts in the semi-structured flipped classroom. Similarly, the learners in the semi-structured flipped classroom achieved better results than those in a traditional classroom without flipped teaching.

The ANOVA results revealed significant differences in the mean scores for academic performance as evaluated for the four themes studied by the learners in EG1 ($F(2, 80) = 13.78$, $p <.05$). Likewise, significant differences were found in the mean scores for academic performance as evaluated for the four themes studied by the learners in EG2 ($F(2, 80) = 11.25$, $p <.05$). These differences might be partially due to the fact that participants who received flipped teaching gradually became familiar with the instruction and the subsequent assessment, and thus, they achieved better results as the instructional cycle was repeated. Overall, the learners from the flipped classroom exhibited the highest improvement among the three groups, as demonstrated by the assessments for all four themes. However, the findings surprisingly revealed that learners in the traditional classroom did not witness gradual development across the four assessments ($F(2, 80) = 2.15$, $p =.68$, n.s.). This might indicate that the repetitive instructional cycle did not benefit learners without incorporation of flipped teaching in terms of clarifying instructions and learning goals for subsequent assessments.

Learners' Attitudes Toward Flipped Teaching

As measured by a questionnaire and supplemented with interview comments, the second research question examined students' perceptions and attitudes toward a flipped classroom. These responses were analyzed to determine the perceived satisfaction level of students towards flipped teaching. Table 3 presents the descriptive statistics of learners' attitudes towards the flipped classroom.

TABLE 3
Descriptive Statistics for Learners' Attitudes towards Flipped Teaching

Items	EG 1		EG 2		CG	
	Mean	SD	Mean	SD	Mean	SD
1. I am satisfied with the content and topics of the learning material	3.5	.71	3.4	.68	3.3	.70
2. I am satisfied with the control and freedom of choosing what and how to learn	3.6	.75	3.1	.69	2.3	.89
3. I have met the learning outcomes of this course.	3.6	.61	3.2	.55	2.1	.65
4. I felt motivated in this course.	3.5	.52	3.1	.44	2.2	.55
5. The learning materials were interesting	3.8	.42	3.0	.54	2.0	.56
6. I felt prepared for this course.	3.7	.35	3.0	.44	1.8	.43
7. I am satisfied with the way that the materials were delivered.	3.9	.41	3.1	.48	2.0	.40
8. I am satisfied with my presentation in class.	3.8	.42	3.2	.44	2.2	.61
9. I am satisfied with the classroom activities.	3.5	.52	3.0	.64	2.1	.55
10. I am satisfied with the homework.	3.6	.52	3.1	.42	2.3	.41
11. I prepared a lot for this course.	3.9	.51	2.9	.74	1.9	.81
12. Overall, I am satisfied with this course.	3.8	.81	3.1	.85	2.2	.78

Table 3 indicates that learners in EG1 have the highest satisfaction scores, followed by EG2 and CG. The high scores for EG1 students reflected a positive attitude toward flipped teaching held by the learners in this group. This attitude was consistent across the 12-item questionnaire. Table 4 summarizes the comparison of results from the three groups, using the one-way ANOVA and post-hoc Tukey's tests.

TABLE 4
Comparison of Group Differences on Learners' Attitudes Based on One-way ANOVA and Post-hoc Tukey Tests

Items	F	p	Post-hoc turkey
1	9.89	.12	EG1=EG2=CG
2	12.54	.02*	EG1>EG2>CG
3	12.31	.04*	EG1>EG2>CG
4	13.12	.04*	EG1>EG2>CG
5	12.15	.03*	EG1>EG2>CG
6	11.68	.02*	EG1>EG2>CG
7	12.16	.03*	EG1>EG2>CG
8	13.62	.03*	EG1>EG2>CG
9	14.15	.04*	EG1>EG2>CG
10	12.35	.01*	EG1>EG2>CG
11	13.78	.00*	EG1>EG2>CG
12	10.12	.01*	EG1>EG2>CG

Note. *significance at .05 level '>' means a significant higher score

The descriptive statistics in Table 3 along with the inferential statistics in Table 4 show that the independent variable examined in the present study (varying approaches to flipping the classroom) did not have a significant impact on the participants' perceived satisfaction of the content and topics of the learning materials (item 1). That is, the participants seemed to be quite satisfied with the content and topics of the learning materials. In terms of satisfaction levels deriving from the freedom to choose what

and how to learn (item 2), the participants from the flipped classroom were more satisfied than those from the semi-structured flipped classroom, and the participants in the semi-structured flipped classroom were more satisfied than those from the traditional classroom. The mean scores for items 3 and 4 for the three groups were significantly different (flip > semi-flip > non-flip), suggesting that exposing students to the structured flipped classroom, in comparison to the semi-structured flipped classroom and traditional classroom, could effectively keep them motivated to learn, and thus were more likely to meet the learning outcomes of this course. The significantly different mean scores for the three groups (item 5) showed that varying approaches to flipping the classroom had a substantial effect on the participants' perceived interest in the learning materials. Likewise, participants in EG1 also reported that they felt most prepared for the course, followed by participants in EG2 and CG (item 6). With regard to participants' perceptions of the methods and structures used for delivering learning materials (item 7), presentation in class (item 8), classroom activities (item 9), and homework (item 10), the participants from the flipped classroom showed a higher level of satisfaction than those from the semi-structured flipped classroom, and the participants in the semi-structured flipped classroom showed a higher level of satisfaction than those from the traditional classroom. In terms of effort exerted for pre-class preparation (item 11), the participants in EG1 reported the highest level of concerted effort in preparing for the course, followed by EG2 and CG. For the group comparison results of overall satisfaction levels with the learning experiences (item 12), the participants from both EG1 and EG2 reported significantly higher levels of overall satisfaction than those from the CG. In addition, significant differences were also detected in the overall satisfaction levels between EG1 and EG2. The high overall learning satisfaction ratings indicated that structured flipped teaching was well-received by the participants, followed by semi-structured flipped teaching and traditional teaching.

Analysis of Interviews

The aforementioned findings on academic performance and learners' attitudes toward flipped classrooms were corroborated by the interviews. According to the data collected from the interviews, the participants' responses were classified into the following five categories:

- Supporting the format of the learning materials;
- Promoting autonomous learning;
- Promoting higher participation levels in and beyond the classroom;
- Promoting active cooperation;
- Engaging in self-assessment and peer-assessment.

Table 5 displays the participants' percentage level for each of these categories.

TABLE 5.
Percentage of Interviewees' Responses on Each Category

	EG1	EG2	CG
Supporting the format of the learning materials	90	50	10
Promoting autonomous learning	90	60	30
Promoting higher participation levels in and out of the class	90	70	20
Promoting active cooperation	90	60	30
Engaging in self-assessment and peer-assessment	80	50	20

Supporting the format of the learning materials

Nine students in EG1 (90%) were in favor of the format for the learning materials. For example, one student reported, "I really enjoyed this learning experience, particularly the way that the materials were

organized. It allowed me to study learning materials at any time." In contrast, only five students in EG2 (50%) pointed out that the format of printed learning materials was one of the best elements of the current learning experience. In addition, only one student (10%) in the control group agreed with this. A significant percentage of students stated that they were not satisfied with simply following their teacher's instructions for learning the materials.

Promoting autonomous learning

Nine interviewees (90%) in EG1 reported that they focused more on active learning, and were not in favor of depending on teachers for procuring ready-to-use learning materials. That is, these students preferred to depend on their own ability to acquire the necessary learning materials and solve problems. For example, one student stated, "It is important for me to study and find the solutions on my own to finish a project well, rather than simply following the teacher's guidance." Six students in EG2 (60%) reported that they would focus on active learning. While only three students in CG (30%) said that they participated in active learning, others in the group stated that they were heavily dependent on the instructions and assignments given by the teachers.

Promoting higher participation levels in and beyond the classroom

Nine interviewees in EG1 (90%) reported high participation levels in and out of the classroom. As one student noted, "I like to give presentations in the class, and I have watched the videos several times for giving better presentations in the class. I also spent a lot of time preparing for the course, beyond the class." Seven students in the EG2 (70%) likewise agreed to the significance of increased participation in and beyond the classroom. However, only two students in the control group responded to this item positively. This might imply that students in the CG experienced relatively lower participation levels in and outside the class.

Promoting active cooperation

Approximately 90% of the interviewees in EG1 reported that they were more willing to cooperate with their classmates in classroom activities. For example, one student reported, "I was very happy to do some tasks with my classmates because I had prepared very well for these tasks. I used to be very scared in this kind of a situation." Another student added, "Now I will try to talk with my classmates because I want to express what I have learned or know so far. I have noticed that other classmates also feel in the same manner. This learning experience has taught me to cooperate in different circumstances." Six students in EG 2 (60%) also agreed on the benefits of active cooperation. With regard to CG, only three students (30%) in the control group reported engaging in cooperative action for completing the tasks; most of the students confessed their reluctance in performing the allotted tasks.

Promoting self-assessment and peer-assessment

With the exception of two participants, all other interviewees in EG1 (80%) reported that they had started self-assessment and peer-assessment. One student said, "I am aware of the goals that I should achieve in a task, and I have begun to evaluate my performance on the basis of these goals. This self-evaluation has increased my confidence in my performance." Another student added, "I have begun to evaluate other classmates' performances. I have witnessed this change in me from the time I started taking the lessons." Five students in EG2 (50%) also expressed a similar change in outlook after taking the lessons. In contrast, two students (20%) in the control group reported this behavior.

Overall, students in the flipped classroom exhibited higher levels of autonomy, competence and

relatedness, as suggested by Abeysekera and Dawson (2015). The present study further presents evidence that flipped teaching provides more opportunities for active learning, peer-assessment, ad self-assessment.

Discussion

The results suggest that the flipped teaching approach can be successfully utilized in an EFL classroom comprised of students with intermediate English levels to enhance their classroom participation, which would ultimately contribute toward improving academic performance. Findings from other large-scale experiments have also found similar convincing evidence of learners in the flipped classroom, who have exhibited statistically significant academic performance advantages over those in the traditional classroom (Davies, Dean, & Ball, 2013; Missildine, Fountain, Summers, & Gosselin, 2013). In a recent study (Bikowski & Vithanage, 2016), web-based collaborative writing was an effective approach to flipping a writing lesson. The present research, combined with research from other studies noted above, has contributed to the development of flipped teaching as an approach to helping English language learners in blended-learning settings.

Furthermore, WebQuest active learning is an effective medium for delivering flipped English lessons. Results from this study indicated that structured flipped teaching, augmented by the use of WebQuests, exerted positive effects when engaging students in the learning process. Similar results were also found from previous studies that employed inquiry-oriented lesson formats to create an organized learning environment for active learning (e.g., Hung, 2015; Tsai, 2005). For example, three WebQuests were created using the wiki tool Google Sites in Hung's (2015) study. This example shows that WebQuest is useful for providing a structured and enriched learning environment for EFL learners. In a study by Tsai (2005), students at a university in Taiwan participated in two groups—the treatment group, which received a WebQuest learning module embedded in traditional EFL instructions, and the control group, which received traditional text-only EFL instructions. Results showed that the use of WebQuests produced a significant difference in participants' vocabulary acquisition and story reading performance. Although the actual content and structure of learning materials that were used in the present study differed from that of the two cited earlier studies, all of these studies have endorsed the benefits of WebQuests. Integrating technology (e.g., WebQuest) in structuring learning materials is an effective active learning strategy for flipping lessons. Hence, language teachers could use a WebQuest strategy as an aid in their flipped teaching practices as well as in supplementing learning materials.

Finally, students in the structured flipped classroom had more positive attitudes toward flipped teaching than those in the semi-structured flipped classroom. Additionally, students in the semi-structured flipped classroom expressed a higher level of satisfaction than those in the traditional classroom. Similar results have been discovered in other studies (Smith, Brown, Purnell, & Martin, 2015; Touchton, 2015). Results in favor of flipped teaching are important because student satisfaction is one of the primary goals of this model. In this context, students' responses regarding the usefulness, feasibility and agreeability of the flipped teaching model determine the willingness of students to deploy skills acquired through flipped learning in future scenarios. Data collected from interviews further suggested the future application of flipped learning skills. Students found the structured flipped classroom environment more comfortable and enjoyable than the semi-structured flipped classroom, and students in the semi-structured flipped classroom were more satisfied than those in the traditional classroom. This was demonstrated in a wide variety of categories: the format of learning materials, better active learning, higher participation levels in and outside of class, active cooperation, and conducting self-assessment of learning outcomes. Students with higher levels of satisfaction and involvement often exhibit better learning performance (Altstaedter & Jones, 2009; Qin & Teng, 2017; Teng, 2017b). This factor explained the reason behind the better academic performance of learners in the flipped classroom. It also implied that leaners in a flipped classroom may have a greater relative willingness and confidence to pursue additional learning compared to those in the traditional classroom; hence, the former exhibited better academic performance than the

latter.

Overall, the flipped approach is likely to satisfy students' needs for autonomy, competency, relatedness, and thus, create greater conditions for intrinsic motivation, which lead to empowerment, development, engagement, and an ability to learn independently or at their own pace. This corroborates self-determination theory (Deci & Ryan, 2002), according to which students who are trained to learn independently may achieve better performance (Kim et al., 2014; Teng, 2016). This also explains why the learners with flipped teaching were able to perform the lower levels of cognitive work at home, and concentrate on the higher forms of cognitive work in class via hands-on activities or practice, as suggested in cognitive load theory (Sweller, 1988). This is a new finding supplemental to Hung (2015), which shows a benefit of flipped teaching in enhancing students' academic performance. This may be explained in that the lower levels of Bloom's Taxonomy of cognitive domains (e.g., remembering, understanding) are presented before class through videos with the flipped model. Readings and other materials also provide this foundational support for learning so that in-class time can be spent working on higher levels of learning from application to evaluation (e.g., applying, analyzing, evaluating, and creating). In flipped classrooms, students proceed from the lowest level (remembering) to the highest level (creating). In contrast, students in the traditional classroom practiced the lowest level of remembering and understanding in the classroom by listening to the instructor's words, while other levels were practiced outside the class such as doing homework or no work. Therefore, the flipped approach can be used as an effective means to support learners in achieving a higher level in the taxonomy.

Limitations, Implications, and Future Work

Although these results strongly suggested the benefit of flipped teaching for students' academic performance and overall satisfaction, there are limitations in this study and some are noted here. First, the findings from this study were concluded based on a limited sample size, and the sample was taken from a single university in China. In order to generalize the findings, researchers can further explore this research direction to gain insights into how flipped teaching can support and enhance English teaching and learning within different learning contexts. Second, students with a higher language proficiency level may have had a higher level of autonomous learning than lower proficiency level students (Teng, in press). If students with lower English proficiency were invited to this study, the results obtained from the current study might have differed significantly. Finally, reflective entries used in this study were collected from semi-structured interviews. Other instruments, e.g., asking students to write diaries or journals, can be used to further explore students' attitudes toward flipped teaching.

These limitations, however, do not negate the effects of flipped teaching discovered by the present study. Variations of this pedagogy coupled with other innovative technology are essential for further development of flipped teaching—one of the most effective approaches for transforming learning experiences (Horn, 2013). As an initial effort to experiment with an effective flipped teaching approach, this research has provided useful insight to language teachers interested in flipped teaching. This research may acquaint these teachers with available technological tools, such as QuestGarden, WebQuest and videos, which are useful when flipping classrooms. Examining the instructional design for employing flipped teaching can increase one's depth and breadth of knowledge about the flipped-classroom approach.

Conclusion

In conclusion, our implementation of the flipped teaching in a cross-cultural communication course was successful based on students' academic performance measures, survey, and qualitative feedback. However, there are still outstanding issues to be resolved before all EFL students and faculty

wholeheartedly embrace this approach to EFL teaching and learning.

One issue to bear in mind is that adjusting to a new educational paradigm is never easy, particularly in the Chinese EFL context, where CLT has been met with ambivalence (Yu, 2001). Second, flipping the classroom requires a communicative approach plus the addition of technology, thus it is obvious that this would be more challenging in this context. Third, flipped learning videos are expected to encourage students to interact as well as watch. However, there are some challenges, such as the suitability of the flipped classroom due to poor quality of video lectures and untrained instructors (Zainuddin & Halili, 2016). In light of the results from the present study, it is suggested that despite the obstacles that the flipped classroom approach may present, it is an acceptable new methodology for taking CLT one step further. Flipped teaching addresses the needs of EFL students in the 21st century for using technology and surrounding themselves with collaborative and creative methods to learn (Dorman, 2016). Once students and teachers embrace the flipped teaching approach, they are likely to find that the flipped classroom is a superior experience for language learning.

The Author

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