



Volume 16, 2017

## AN INVESTIGATION OF THE USE OF THE 'FLIPPED CLASSROOM' PEDAGOGY IN SECONDARY ENGLISH LANGUAGE CLASSROOMS

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### ABSTRACT

Aim/Purpose	To examine the use of a flipped classroom in the English Language subject in secondary classrooms in Hong Kong.
Background	The research questions addressed were: (1) What are teachers' perceptions towards the flipped classroom pedagogy? (2) How can teachers transfer their flipped classroom experiences to teaching other classes/subjects? (3) What are students' perceptions towards the flipped classroom pedagogy? (4) How can students transfer their flipped classroom experiences to studying other subjects? (5) Will students have significant gain in the knowledge of the lesson topic trialled in this study?
Methodology	A total of 57 students from two Secondary 2 classes in a Band 3 secondary school together with two teachers teaching these two classes were involved in this study. Both quantitative and quantitative data analyses were conducted.
Contribution	Regarding whether the flipped classroom pedagogy can help students gain significantly in their knowledge of a lesson topic, only one class of students gained statistically significantly in the subject knowledge but not for another class.
Findings	Students in general were positive about the flipped classroom. On the other hand, although the teachers considered that the flipped classroom pedagogy was creative, they thought it may only be useful for teaching English grammar.
Recommendations for Practitioners	Teachers thought that flipping a classroom may only be useful for more motivated students, and the extra workload of finding or making suitable pre-lesson online videos is the main concern for teachers.
Recommendations for Researchers	Both quantitative and qualitative analyses should be conducted to investigate the effectiveness of a flipped classroom on students' language learning.
Impact on Society	Teachers and students can transfer their flipped classroom experiences in English Language to teaching and studying other subjects.

Accepted by Editor Keith Willoughby. | Received: August 9, 2016 | Revised: November 14, December 21, 2016 | Accepted: January 2, 2017.

Cite as: Yang, C. C. R. (2017). An investigation of the use of the 'flipped classroom' pedagogy in secondary English language classrooms. *Journal of Information Technology Education: Innovations in Practice*, 16, 1-20. Retrieved from <http://www.informingscience.org/Publications/3635>

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Future Research More classes should be involved and a longer period of time should be spent on trial teaching in which a flipped classroom can be implemented in different lesson topics, not only teaching grammar. Teachers also need to determine if students can use the target language item in a task.

Keywords flipped classroom, English language, pedagogy, secondary, Hong Kong

## INTRODUCTION

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In modern societies, people have grown up with technology and they are very much in tune with using technology in their daily lives. In education, the traditional teacher-centred approach, which emphasises content instruction and regurgitation, is not appropriate for today's learners who are 'digital natives' (Prensky, 2005) and have grown up with computers, video games and the Internet. Therefore, technology also plays an important role in school settings (D'Angelo & Woosley, 2007; Zhang, 2015).

The Curriculum Development Council (2000, p. 22, 24-25) of Hong Kong has proposed to foster students' nine generic skills (collaboration, communication, creativity, critical thinking, information technology, numeracy, problem-solving, self-management, study), in addition to eight Key Learning Areas (Chinese Language Education; English Language Education; Mathematics Education; Science Education; Technology Education; Personal, Social and Humanities Education; Arts Education; Physical Education) for over 10 years so that school students are prepared to tackle the challenges of the 21<sup>st</sup> century. To facilitate students' development of generic skills, the learning environments need to be changed. They should be changed from being teacher-directed to more learner-centred (Roehl, Reddy, & Shannon, 2013) in which students are given opportunities to complete some tasks, and engage in reflection to reflect on what they have learned and their learning process (Luca & Oliver, 2001, 2003). In other words, it means that the learning environments that can develop students' generic skills should be characterised by their active engagement in learning tasks, and having frequent teacher-student and/or student-student interactions (Kember & Leung, 2005; Kember, Leung, & Ma, 2007). Based on this rationale, the innovative pedagogy of a 'flipped classroom', which refers to flipping the direct teacher instructions to online lessons and then having group activities in face-to-face classes, was attempted in this action research. It was expected that through adopting the flipped classroom approach, the following objectives could be achieved:

For teachers:

- To experience the flipped classroom pedagogy by designing appropriate learning materials for students; and
- To foster teachers' reflective abilities on how to transfer the flipped classroom experiences to teaching other classes/subjects.

For students:

- To transform students from passive to active learners;
- To develop students' generic skills; in particular, self-study, self-management, communication, collaboration and information technology; and
- To develop students' reflective abilities on how to transfer the flipped classroom experiences to studying other subjects.

## LITERATURE REVIEW

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### *WHAT IS A FLIPPED CLASSROOM?*

A flipped classroom is a new pedagogical method which consists of video lectures (the videos can be those that are available from the Internet, or pre-recorded by teachers themselves) that students watch at their own time and pace prior to attending classes in which they participate in group activi-

ties or the teachers answer their questions (Stone, 2012). This is the reverse of the traditional teaching approach in which students are expected to listen to their teachers during classes but have activities with interactions and collaboration outside of classes (Mok, 2014; Shimamoto, 2012; Talbert, 2012).

### ***FINDINGS OF PREVIOUS STUDIES ON THE USE OF THE FLIPPED CLASSROOM APPROACH***

Previous studies examining the use of the flipped classroom pedagogy in different subject areas (see, for example, Gaughan, 2014) usually showed rather positive feedback of learners (Butt, 2014; Mok, 2014; Musib, 2014) and a number of benefits as presented below.

First, in a survey of 24 studies related to flipped classroom practices, it was found that there were mixed feelings about watching online videos instead of attending lessons. However, the participants were generally positive towards in-class group activities (Bishop & Verleger, 2013), as these were beneficial to their learning (Musib, 2014). Similarly, in a study of the flipped classroom in a university course, Findlay-Thompson and Mombourquette (2014) found mixed opinions of students, but they reported having more interactions with their professor and peers in a flipped classroom environment than in a traditional classroom environment.

Another benefit of a flipped classroom is related to the development of generic skills. Through interacting with professors or peers, or working on group tasks, students' communication and collaboration skills (as examples of generic skills) can be developed (McLaughlin et al., 2014). Ng's (2016) study also shows students' high rating of the questionnaire items related to generic skills (with the development of self-study skills being rated the highest) when she adopted the flipped classroom pedagogy in teaching pre-service kindergarten teachers photo editing.

In addition, there is a higher level of student engagement in learning. Students are much better prepared for class (Musib, 2014) when they are given video lectures than when they are given textbook readings (De Grazia, Falconer, Nicodemus, & Medlin, 2012).

Students also have ownership of their learning because of the availability of pre-recorded lesson videos. This aspect is particularly useful for slow learners, as they can repeat the online videos until they have mastered the lesson content (Mok, 2014; Musib, 2014). In other words, the flipped classroom can promote students' deeper understanding of knowledge and concepts, and make them successful in learning (McLaughlin et al., 2014).

In subject knowledge learning, Kong (2014), in his flipped classroom study of an integrated humanities subject involving a 13-week trial teaching across two academic years, found that the 107 students from four Secondary 1 classes had statistically significant gain in domain knowledge (in developing information literacy competency and critical thinking skills). Ng (2016) also found that the flipped classroom benefited students' learning as the 74 Higher Diploma students taught by her were able to apply the self-learned subject knowledge to a real situation. Nevertheless, Guy and Marquis's (2016) quasi-experimental study comparing 433 business-major students' learning in two modes revealed that students only performed slightly better when they were in a flipped classroom environment than in a traditional lecture-based instructional method (83% and 82% respectively in the students' average final grades on course assessment).

Furthermore, using the flipped classroom pedagogy can encourage students' reflection and develop their reflective abilities because they need to reflect on the connection between the course materials they have prepared prior to the lessons and the activities conducted in classes (Roehl et al., 2013; Vaughan, 2014).

Finally, it is believed that the knowledge and skills developed from the pedagogy of flipped classroom can be transferred to other courses or even to the future. In McLaughlin et al.'s (2014) study, in

which a pharmaceuticals course was flipped, nearly all students (98.1%) agreed or strongly agreed that the knowledge and skills they developed would be useful to their future.

Because of the generally positive feedback of students to the flipped classroom approach and its benefits to learning, Musib's (2014) trial in his introductory-level multidisciplinary course found most of his students (more than 90%) agreed that course instructors should continue implementing the flipped classroom approach in this course or other courses. Guy and Marquis (2016) also found that more than half of the students (75%) in their study preferred the flipped classroom environment but only 17% preferred the traditional learning method.

From the studies reviewed above, it can be found that there are many benefits of using the flipped classroom pedagogy and students' feedback towards this approach was usually positive. However, Tanner and Scott (2015), in their study in which the flipped classroom pedagogy was adopted to teach system analysis, design and implementation at university level, found that even though most students thought that the flipped classroom approach improved their understanding of theoretical concepts, some students felt that readings were more efficient than the videos. In other words, it means that whether a traditional method or a flipped classroom should be adopted depends on students' different learning styles.

When using the flipped classroom pedagogical method, educators need to consider the length of video presentations. In Wagner, Laforge, and Cripps's (2013) study, nearly half of the students (57.1%) preferred videos of 10-15 minutes long and few students (35.7%) even preferred videos that are less than 10 minutes in duration.

Based on the review of previous studies and the best knowledge of the researcher, using flipped classroom pedagogy in English Language has not been researched. Thus, the present study was conducted to fill the research gap by investigating the use of the flipped classroom pedagogy in secondary English Language classrooms.

## **METHODOLOGY**

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The current study is an action research examining the use of the flipped classroom approach in English Language. Specifically, the researcher aimed at finding out the participating teachers' and students' perceptions towards this new approach and investigating whether the flipped classroom could be a pedagogy for fostering teachers' reflective abilities and developing students' generic skills. To achieve the aims of the study, the following research questions were answered:

1. What are teachers' perceptions towards the flipped classroom pedagogy?
2. How can teachers transfer their flipped classroom experiences to teaching other classes/subjects?
3. What are students' perceptions towards the flipped classroom pedagogy?
4. How can students transfer their flipped classroom experiences to studying other subjects?
5. Will students have significant gain in the knowledge of the lesson topic trialled in this study?

The details of this action research are presented as below.

### ***THE PARTICIPANTS***

The participants involved in this study were two classes of Form 2 (i.e. Grade 8) students from St. Francis Assisi's College, a Band 3 school in Hong Kong (students are divided into three bands with Band 1 being the highest achievers and Band 3 the lowest achievers, so a Band 3 school was selected for analysis because the researcher would like to find out if the flipped classroom pedagogy can benefit the learning of lower achievers). They included 31 males (14 and 17 in 2B and 2C respectively) and 26 females (16 and 10 in 2B and 2C respectively). These two classes (2B and 2C), including 30 students from 2B and 27 from 2C, were taught by two teachers (one female and one male respectively) who were having their first-year and second-year of teaching respectively during the time when

this study was conducted. Given the fact that these two teachers were novice English teachers who would like to learn more about new teaching approaches, they participated in this action research on a voluntary basis. Even though they had never tried using flipped classroom before participating in this action research, they had some ideas about this pedagogy. 2B and 2C were selected for investigation as they were junior form classes in which students did not have to face public exam pressure so could have time to try a new project. Also, the English levels of 2B and 2C students were similar as shown in their first-term exam results (see Tables 1 and 2), though 2B students were more motivated.

**Table 1. First-term English exam results of 2B**

	Reading	Writing	Listening	Speaking
<b>Highest score</b>	92	74	78	85
<b>Lowest score</b>	40	50	10	30
<b>Mean score</b>	68.90	66.61	48.52	68.35
<b>Median score</b>	72	67	51	70

**Table 2. First-term English exam results of 2C**

	Reading	Writing	Listening	Speaking
<b>Highest score</b>	71	74	78	83
<b>Lowest score</b>	29	28	10	41
<b>Mean score</b>	42	51.89	38.52	65.19
<b>Median score</b>	37	55	37	67

\*Note: The full mark of each of the four papers is 100.

### ***PROCEDURE***

Before the implementation of this study, on 11 March 2016, the researcher met the participating teachers for a briefing session (for about an hour) to let them know about the ‘flipped classroom’ pedagogy and the procedure for conducting the study. After the briefing session, the researcher sent the URL of the Google site titled ‘Flipped Classroom: Teachers’ Site’ (<http://goo.gl/forms/Z0tscYOKdXqSibfB2>) to give the participating teachers an opportunity to experience a flipped classroom before they implemented it in their own classrooms so that they could have a better understanding of this pedagogy. In this teachers’ site, there are four videos about flipped classroom and there is a question under each video to let the teachers reflect on whether they could understand the contents of the video.

Then another Google site (<http://goo.gl/forms/ytFHxVPd04uVvVug1>) was developed for students to study the chosen lesson topic, present perfect tense (the present perfect tense as a grammar item in English was chosen for investigation in this study as it is form-focused that involves the correct use of its form, i.e. has/have + past participle, that could allow the researcher’s easy comparison of the students’ learning performance before and after the use of flipped classroom). It includes a pre-test of 10 question items and 4 YouTube videos (the duration of each video is not more than 5 minutes to sustain students’ attention to watch it, and there are some questions under each video to check students’ understanding of the video contents, with a total of 7 question items for 4 videos). Students first had to complete the 10 statements by filling in the correct form of the verbs given in brackets to let the researcher and their English teachers check their previous knowledge about the present perfect tense. After completing the pre-test, students moved on to the self-learning phase to learn about the present perfect tense by watching the 4 videos according to their own pace and time schedule. In other words, they could watch the videos again and again to ensure they had mastered the learning materials. As agreed in the briefing session, this task was assigned to the students as their Easter holiday homework so as to make sure that the students had enough time to watch the videos and complete the tasks. Therefore, the two teachers posted the URL of the Google site to eClass, the

learning platform used in this school, and asked the students to complete the tasks in the site during Easter break.

In the face-to-face lesson (a double period) after the self-learning phase (on 18 May 2016), the participating teachers asked their students to complete some worksheets to check the students' knowledge of the form of the present perfect tense and to find out whether they could apply the present perfect tense in meaningful tasks (interviewing partners to find out what they have done to live a green life this week, and then writing a short report to tell their teachers how green their partners are). When students were completing the tasks, the teachers walked around the classrooms to see if the students had any questions or needed any individual help. In the last 20 minutes of the double period, the teachers asked students to go to the post-project Google site (<http://goo.gl/forms/Hsm06op2M54V59rz2>), created by the researcher beforehand, which includes a post-test (with the same 10 question items as those in the pre-test for an easy comparison of students' learning performance) and an end-of-project questionnaire to seek students' opinions about the use of a 'flipped classroom' in English teaching and learning.

### ***DATA COLLECTION AND DATA ANALYSIS***

Considering the importance of collecting data by using different methods to achieve triangulation and enhance credibility (Lee, 2005; McMillan, 2000), both quantitative and qualitative data were collected in this action research. First, the quantitative data were collected by asking students to complete the online end-of-project questionnaire (see Appendix A) after learning the materials about the present perfect tense (i.e. the YouTube videos about the present perfect tense) available on the Google site to find out their perceptions towards the use of flipped classroom pedagogy. The method of descriptive statistical analysis was then used to analyse the questionnaire data. After that, the qualitative data were collected from the two participating teachers and their students. Three students from 2B and 2C (one male and one female from 2B, and one male from 2C) were invited on a voluntary basis and the two teachers were also asked to have semi-structured interviews (see Appendix B and Appendix C for the interview questions for teachers and students respectively) to collect their opinions about the flipped classroom and how they can transfer their flipped classroom experiences to teaching/studying other classes/subjects. The interviews were audio recorded and then transcribed. The data were analysed by using qualitative content analysis (Flick, 2002). Through reading the interview transcripts repeatedly, certain categories that were relevant to the aims of this study emerged. The data were then summarised in a systematic way (Seliger & Shohamy, 1989).

In order to conclude whether the use of a flipped classroom can make students have significant gain in the knowledge of the lesson topic, a paired sample t-test was used to compare two means (Kent State University, 2014) (i.e. mean scores of students' pre- and post-tests) and performed by using SPSS, a software application used for statistical analysis.

### **FINDINGS**

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In this section, the findings of this action research are presented based on the sequence of the research questions.

#### ***TEACHERS' PERCEPTIONS TOWARDS A FLIPPED CLASSROOM***

The two teachers' perceptions towards the flipped classroom pedagogy were found out by interviewing them and are presented in this section to answer Research Question 1.

First of all, both of them liked the idea of flipping a classroom because it is creative and interesting, as shown in their responses:

- *I think that most of the students were engaged in this project because they think that the project is very creative.* (Teacher A)
- *...flipped classroom to me is quite an interesting idea* (Teacher B)

Regarding the use of a flipped classroom in English Language teaching, Teacher B thought that it is useful only for teaching grammar items because students can study the grammar rules by themselves at home before the lesson and then less time can be spent on teacher's explanations but more time on students' use of the grammar items in the class. Teacher A also mentioned the advantage of a flipped classroom for mastering a grammatical point, but it is only for some more able or motivated students.

About whether a flipped classroom can help students become more active in learning, the two teachers both thought that it is to a certain extent only. While Teacher A believes that "learning is not a teacher-centred process", she thought that in this school "punishment is more effective than reinforcement" if she needs to make sure that the students have watched the videos and completed the online tasks before the face-to-face lesson. For Teacher B, he found that students became more active in the participation of in-class activities. Their feelings are extracted as follows:

- *students in our school are not that learning motivated...some of them just don't care. They just don't care.* (Teacher A)
- *To some extent yes because for most of the time students are not active or they are quite passive...So if they if they have previous knowledge by, you know, watching some videos online first at home, and then when they come back to the classroom, they can they can have a better understanding and they know more about the topic. Then they can become more active you know when when in the classroom when having the class when the teacher asks them questions.* (Teacher B)

On the other hand, Teacher A queried the benefit of using flipped classroom pedagogy in the English Language subject because its nature is different from other subjects:

- *But I think in terms of language, the process of language acquisition is longer...So if the students can master half of the online exercise, it doesn't mean that they can use the language, right?*

Teacher B also raised the issues of students' access problem to the online videos and heavy workload brought to teachers if they have to make the lesson videos:

- *some of the students may not have Internet access at home. Because some of them some of them are living in mainland China, so the Internet access to Hong Kong websites may have some difficulties... If the teachers themselves have to be responsible for making the videos, that would be terrible because we don't have enough time or we don't have or we are just too tired...That's really add burden to our workload.*

He went on to add that even if some ready-made videos are available in YouTube, students may not be familiar with native speakers' accent and follow their speaking pace.

Overall, to answer Research Question 1 ("What are teachers' perceptions towards the flipped classroom pedagogy?"), it can be concluded that the two teachers participating in this study liked the idea of flipped classroom. However, in the English Language subject, they thought that flipped classroom is only useful for teaching grammar. Also, its benefit to learning (or more specifically, language learning) depends on students' motivation and may need a long period of time to be seen because language acquisition is a long process. If the flipped classroom pedagogy has to be conducted in future, there is concern about heavy workload that may be brought to teachers in making lesson videos, as the videos available from the Internet (or more specifically, YouTube) may not always be suitable.

### ***TEACHERS' TRANSFER OF THEIR FLIPPED CLASSROOM EXPERIENCES***

In this section, the answer of the research question "How can teachers transfer their flipped classroom experiences to teaching other classes/subjects?" is presented.

Teacher A thought that, while it is "very creative and stimulating" to use a flipped classroom to teach mathematics or other science subjects, it is not easy to use the flipped classroom pedagogy in a lan-

guage subject, because language is more skill-based and language use is more important, which is different from other subjects that involve more concrete subject knowledge.

On the other hand, Teacher B mentioned that if the videos that are suitable for particular grade levels can be made, he would also like to use flipped classroom in other junior form English classes, because students' "free time can be used more meaningfully" by assigning them to watch some videos to preview a lesson topic beforehand.

### ***STUDENTS' PERCEPTIONS TOWARDS A FLIPPED CLASSROOM***

For Research Question 3, based on the findings collected from the end-of-project questionnaire and the focus group interview, it can be found that the students in the two analysed classes were rather positive towards the use of a flipped classroom.

First, their positive feelings can be demonstrated from their responses to different items of the questionnaire. In Item 1, "I have fully understood the contents of the topic via flipped classroom activities", many of the respondents (79.3%) agreed and strongly agreed with the statement (63.8% agreed and 15.5% strongly agreed). Only a few of them (20.7%) disagreed and strongly disagreed with it. In Item 2, "I have developed self-management skills via flipped classroom activities", the result is similar to the previous item. While many respondents (81%) agreed and strongly agreed with the statement (53.4% agreed and 27.6% strongly agreed), just a few of the respondents (19%) disagreed and strongly disagreed with the item. For Item 3, "I have developed self-study skills via flipped classroom activities", again, 81% of the respondents agreed and strongly agreed (58.6% and 22.4% respectively). Only 19% of them disagreed and strongly disagreed with the item (15.5% and 3.4% respectively). Even though many respondents (74.2%) agreed and strongly agreed that "teacher should use the flipped classroom pedagogy when teaching other topics in future" (Item 6), this percentage is the lowest compared with the percentages of agree and strongly agree in other statements. In other words, 25.9% of the respondents disagreed and strongly disagreed with this item. Finally, in Item 5, in which the respondents could choose what they felt about the flipped classroom experience, the positive feelings were chosen more often than the negative feelings (see Table 3).

**Table 3. Students' feelings about flipped classroom experience**

<b>Students' feelings about flipped classroom experience</b>	<b>Number of counts</b>	<b>Percentage</b>
A. Can learn at my own pace	31	53.4%
B. Can learn at my own time schedule	23	39.7%
C. Learning is more interesting	33	56.9%
D. Learning is more interactive	26	44.8%
E. More difficult to learn	12	20.7%
F. Feel helpless	14	24.1%
G. Less motivated	14	24.1%
H. Heavy workload	11	19.0%

The students' positive feelings about the use of flipped classroom can also be shown in their responses given in the focus group interview. Student B and Student C mentioned that this is a "fresh approach" to learn in this way. Apart from being a fresh learning approach, students pointed out some advantages of a flipped classroom: Student A suggested that the videos can be watched again whenever he finds anything he does not understand, and learners can learn by watching videos anytime by using mobile phones; Student B mentioned that he had become less passive in the learning process; Student C also thought that knowledge can be consolidated more easily if the topic had been previewed before lessons. Lastly, all three students thought that they could develop self-study skills via "watching videos to preview the lesson topic" (Student C) or "trying to translate the English words and contents by themselves" (Student A).



However, the three students also mentioned something about the YouTube videos included in the Google site that made them like least about the flipped classroom: “YouTube videos cannot be accessed in mainland China” (Student A and Student C); “many YouTube videos are not suitable for us (because of the English native speakers’ narration)” (Student B). Student C also found it difficult to complete the pre-project test before learning the lesson topic by watching videos.

To conclude, to answer Research Question 3 (What are students’ perceptions towards the flipped classroom pedagogy?), it can be found that in general the students in the two analysed classes had good perceptions towards a flipped classroom. Many of them expressed that they could fully understand the contents of the lesson topic via flipped classroom activities, had developed self-management skills (for example, by learning and watching lesson videos at their own pace) and self-study skills (by previewing the lesson before attending classes) via flipped classroom activities, and thought that teachers should use the flipped classroom pedagogy when teaching other topics in future.

### ***STUDENTS’ TRANSFER OF THEIR FLIPPED CLASSROOM EXPERIENCES***

Research Question 4 is to answer how students can transfer their flipped classroom experiences to studying other subjects. The results of Item 4 of the end-of-project questionnaire, together with the focus group interview, can give us some ideas.

In Item 4 (“I should be able to transfer the skills that I have developed during the flipped classroom experience to studying other subjects”), the percentage of the respondents agreeing and strongly agreeing with the statement is slightly lower than other items of the questionnaire (77.6%). That is, 22.4% of the respondents disagreed and strongly disagreed with the item. In other words, it means that many of the students believed that they should be able to transfer the skills developed in the flipped classroom of studying the topic of present perfect tense to other subjects. This aspect was further discussed in the focus group interview.

In the focus group interview, Student C mentioned that some online videos can be watched beforehand to preview a lesson topic when studying other subjects. Student A also thought that when studying other subjects such as Science and Liberal Studies which involve a lot of complicated contents, watching videos before listening to teacher’s explanation in the class can help students better understand a lesson topic.

### ***STUDENTS’ GAIN IN THE KNOWLEDGE OF A LESSON TOPIC***

Lastly, Research Question 5 is to answer whether students will have a significant gain in the knowledge of the lesson topic trialled in this study. With the calculation of the difference between the means of pre-test and post-tests (i.e. before and after the use of flipped classroom pedagogy) in 2B and 2C by using a paired sample t-test, it can be found that there was a statistically significant difference in the scores obtained in the pre-test ( $M = .89$ ,  $SD = 1.88$ ) and post-test ( $M = 2.53$ ,  $SD = 3.23$ );  $t(56) = -4.59$ ,  $p = .000$  (see Figure 1 for details of the results of paired samples t-test).

The differences between the mean scores of pre-test and post-tests for 2B and 2C were also calculated separately to see if there was any difference in the results between the two classes. For 2B, again, there was a statistically significant difference in the scores obtained in the pre-test ( $M = 1.50$ ,  $SD = 2.33$ ) and post-test ( $M = 4.20$ ,  $SD = 3.54$ );  $t(29) = -4.63$ ,  $p = .000$  (see Figure 2). However, in 2C, there was no statistically significant difference between the scores obtained in the pre-test ( $M = .22$ ,  $SD = .80$ ) and post-test ( $M = .67$ ,  $SD = 1.30$ );  $t(26) = -2.00$ ,  $p = .056$  (see Figure 3).

Based on the calculation presented, regarding Research Question 5, it can be concluded that only 2B students gained significantly in the knowledge about the form of the present perfect tense after using the flipped classroom pedagogy, but not for 2C students. In fact, if we look at the results of 2C (see Appendix D), we can find that 18 students (out of 27) got 0 in both pre-tests and post-tests.

Use of the 'Flipped Classroom' Pedagogy

**Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	.89	57	1.877	.249
	Posttest	2.53	57	3.230	.428

**Paired Samples Correlations**

		N	Correlation	Sig.
Pair 1	Pretest & Posttest	57	.557	.000

**Paired Samples Test**

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Pretest - Posttest	-1.632	2.683	.355	-2.344	-.920	-4.590	56	.000

**Figure 1. Results of paired samples t-test for 2B and 2C**

**Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	1.50	30	2.330	.425
	Posttest	4.20	30	3.537	.646

**Paired Samples Correlations**

		N	Correlation	Sig.
Pair 1	Pretest & Posttest	30	.469	.009

**Paired Samples Test**

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Pretest - Posttest	-2.700	3.196	.584	-3.894	-1.506	-4.627	29	.000

**Figure 2. Results of paired samples t-test for 2B**

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	27	.801	.154
	Posttest	27	1.301	.250

	N	Correlation	Sig.
Pair 1 Pretest & Posttest	27	.480	.011

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Pretest - Posttest	-.444	1.155	.222	-.901	.012	-2.000	26	.056

Figure 3. Results of paired samples t-test for 2C

## DISCUSSION

From the data analysis presented above, it can be found that the two novice English teachers involved in the present study liked the creative idea of flipping the classroom because students could prepare the lesson topic before coming to the class. In other words, the flipped classroom made students become more engaged in learning, as mentioned by Musib (2014). However, even if the flipped classroom pedagogy is interesting, one teacher thought that it is not suitable for the English Language subject, which focuses on the use of language in context instead of the mastery of knowledge or concepts as in other subjects.

Regarding the participating students' perceptions towards the flipped classroom pedagogy, in general the students in the two analysed classes, as the learners involved in previous studies (e.g. Butt, 2014; Guy & Marquis, 2016; Kong, 2014; Mok, 2014; Musib, 2014), had good perceptions towards a flipped classroom. More than half of the students thought that learning is more interesting (56.9%) and they can learn at their own pace (53.4%) in the questionnaire. It was also encouraging to see that heavy workload was the feeling expressed by the lowest percentage of students (19%), which is different from Tanner and Scott's (2015) study. Most students (81%) in the questionnaire and all the three students in the focus group interview even found that they had developed self-study skills. To transfer their flipped classroom experiences, many students (77.6%) believed that they should be able to transfer the skills developed from the flipped classroom experiences to studying other subjects such as Science and Liberal Studies.

Lastly, whereas Kong's (2014) flipped classroom study showed that the 107 students from four Secondary 1 classes had statistically significant gain in domain knowledge, in the current study, only one class of students (2B students) showed statistically significant gain in the knowledge about the form of the present perfect tense, but not for another class, after the implementation of the flipped classroom pedagogy. In fact, if the results of 2C are examined (see Appendix D), it can be found that 18 students (out of 27) got 0 in both pre-test and post-tests. It might probably be explained by the motivation of the students that can affect their learning outcome, because motivation can influence the degree of effort learners put on their L2 learning (Ellis, 1997).

One major limitation of this study is that, apart from Research Question 5, which was answered based on the difference between the mean scores of pre-test and post-test results of 2B and 2C, the other four research questions were all answered based on the participating students' and teachers' perceptions, which may be too subjective. The other limitations of this study include: (a) only a small number of participants (57 students from two classes and 2 teachers) were involved; (b) a very short period time (around two months) was spent on the implementation of the flipped classroom pedagogy; and (c) only the students' performance in the pre-tests and post-tests in answering the 10 question items about the form of the present perfect tense was analysed to see if the students had any significant gain in the subject knowledge. These limitations have to be addressed in future studies.

First, in future research, more classes of students should be involved and a longer period of time (say, for example, at least one term or one school year) spent on trial teaching in which a flipped classroom can be implemented in different lesson topics, not only in teaching grammar items but also other topics (e.g. skimming and scanning skills in reading). Given the fact that learners need to pass through a sequence of developmental stages in language acquisition (Ellis, 1994) and that it takes a long time for the learners to show their language competence, a longitudinal study that aims to investigate the benefit of a flipped classroom to students' language learning can be an alternative in future research.

Also, since knowing the form of a grammar item does not mean that learners are able to apply it for communication, apart from counting the number of correct answers students have in writing the correct form of a language item, teachers also need to determine if students can use the target language item in a task (e.g. a writing task). In other words, both quantitative and qualitative analyses should be conducted to investigate the effectiveness of a flipped classroom on students' language learning, because language competence does not simply refer to the mastery of grammatical rules but also an ability to use the language for meaningful communication (Richards, 2006).

Finally, with regard to the implications for education, considering the fact that implementing a new teaching idea in a school may add extra workload to teachers, the help of teaching assistants in finding appropriate lesson videos from the Internet is necessary. Of course, as the online videos may not always be suitable for Hong Kong students in terms of their levels of difficulty, it is more preferable for teachers to create their own videos by pre-recording their own teaching. However, it requires teachers to spend a lot of time and so it is essential that teachers share their lesson videos with other colleagues, which can encourage staff collaboration.

## CONCLUSION

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This paper has presented an action research in which the flipped classroom pedagogy was trialled in the English Language subject in two Form 2 classes in a Band 3 secondary school in Hong Kong. The study was aimed to find out teachers' and students' perceptions towards the use of flipped classroom pedagogy, whether the pedagogy can foster teachers' reflective abilities and develop students' generic skills, and if students can have significant gain in the subject knowledge with the use of the flipped classroom. After a short period of trial teaching of about two months, it was found that the teachers and students had different perceptions towards this new pedagogy. While both teachers and students liked the creative and interesting idea of flipping a classroom to encourage students' active learning, teachers thought that a flipped classroom may only be useful for more motivated students, and the extra workload of finding or making suitable pre-lesson online videos was the main concern for teachers. For the students, even though many of them expressed that they could fully understand the contents of the lesson topic via flipped classroom activities and only very few students indicated that it was more difficult to learn through a flipped classroom in the end-of-project questionnaire, only one class of students gained significantly in the knowledge about the form of the present perfect tense after the implementation of a flipped classroom but not for another. While many participating students believed that they should be able to transfer the skills developed in the flipped classroom to studying other subjects, one teacher thought that, compared with other school subjects, us-

ing the flipped classroom pedagogy in a language subject is not easy because language learning emphasises using the language but not simply learning the language form.

Overall, it can be concluded that a flipped classroom as a new and creative pedagogy is not suitable for all school subjects (e.g. English Language, a subject that emphasises language use in meaning communication but not just mastery of subject contents). However, teachers and students can still transfer their flipped classroom experiences in English Language to teaching and studying other subjects. This is especially important for students as they can learn to be more active and be more responsible for their own learning (by studying the lesson topic before lessons). Lastly, whether flipped classroom pedagogy can help students gain significantly in their subject knowledge may depend on the students' motivation.

## ACKNOWLEDGEMENT

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I acknowledge the Principal of St. Francis of Assisi's College for allowing me to conduct this action research at his school. I am also thankful for the three English teachers at this school (Ms Loretta Kwong, Ms Anita Ho and Mr Paul Lee) and their students. Without their great help and cooperation, this research could not be implemented successfully. Finally, I would like to thank my former colleague Dr Eugenia M. W. Ng for inspiring me to do this research.

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## APPENDIX A: END-OF-PROJECT QUESTIONNAIRE

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### Flipped Classroom (翻轉教室) Project: End-of-project questionnaire (問卷調查)

Your teacher would like to seek opinions from you about the use of 'Flipped Classroom' in English teaching and learning. Please express your opinion by choosing the most appropriate option(s) below. Your cooperation needs to be highly appreciated.

1. I have fully understood the contents of the topic via flipped classroom activities.  
1. 通過翻轉教室活動，我能完全理解本課內容。
  - A. Strongly agree 非常同意
  - B. Agree 同意
  - C. Disagree 不同意
  - D. Strongly disagree 非常不同意
  
2. I have developed self-management skills via flipped classroom activities.  
2. 通過翻轉教室活動，我發展了自我管理的能力。
  - A. Strongly agree 非常同意
  - B. Agree 同意
  - C. Disagree 不同意
  - D. Strongly disagree 非常不同意
  
3. I have developed self-study skills via flipped classroom activities.  
3. 通過翻轉教室活動，我發展了自學的能力。
  - A. Strongly agree 非常同意
  - B. Agree 同意
  - C. Disagree 不同意
  - D. Strongly disagree 非常不同意
  
4. I should be able to transfer the skills that I have developed during the flipped classroom experience to studying other subjects.  
4. 我應該能夠把翻轉教室教學活動中所發展的能力（如：自我管理，自學）應用到學習其他科目中。
  - A. Strongly agree 非常同意
  - B. Agree 同意
  - C. Disagree 不同意
  - D. Strongly disagree 非常不同意
  
5. Please choose what you feel about flipped classroom experience (Multiple answers allowed).  
5. 請選擇以下你覺得關於翻轉教室的學習經驗（可選擇多個答案）。
  - A. Can learn on my own pace 能根據自己的步伐學習
  - B. Can learn at my own time schedule 可以自己安排時間學習
  - C. Learning is more interesting 學習更有趣
  - D. Learning is more interactive 學習更互動
  - E. More difficult to learn 學習較困難

- F. Feel helpless 感覺無助
  - G. Less motivated 學習動機減少了
  - H. Heavy workload 功課量大
6. Teacher should use the flipped classroom pedagogy when teaching other topics in future.
6. 老師應繼續使用翻轉教室在其他課題上。
- A. Strongly agree 非常同意
  - B. Agree 同意
  - C. Disagree 不同意
  - D. Strongly disagree 非常不同意
7. Other comments about the use of flipped classroom.
7. 其他有關翻轉教室的意見。

## **APPENDIX B: INTERVIEW QUESTIONS FOR TEACHERS**

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1. Do you have any experience of / ideas about flipped classroom prior to participating in this action research? If yes, could you tell me about it?
2. What are your general feelings about flipped classroom?
3. What do you think about the flipped classroom pedagogy for the English Language subject?
4. How did you prepare yourself to experiment with flipped classroom pedagogy?
5. How did you prepare your students to experience this new teaching approach?
6. Do you think that flipped classroom could help your students become more active in learning? Is there any example to give to support/not support your claims?
7. Could you tell me how you could transfer the flipped classroom experience to teaching other classes and/or subjects?
8. If we are going to conduct the flipped classroom activities in future, do you have any suggestions to maximise their effectiveness and/or learning outcomes?
9. Would you like to recommend other colleagues to try using flipped classroom? Why/Why not?
10. Do you have any other comments about the flipped classroom pedagogy that you would like to give?



## APPENDIX C: INTERVIEW QUESTIONS FOR STUDENTS

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1. Do you have any experience of flipped classroom prior to taking this subject? If yes, could you tell me about it?  
你在上此堂課之前對於翻轉教室有甚麼經驗？如果有，可以分享一下嗎？
2. What are your general feelings about flipped classroom?  
你對於翻轉教室有甚麼感受？
3. What do you think about the flipped classroom pedagogy for this subject?  
你對於翻轉教室這種教學方法有甚麼想法？
4. Have you encountered any difficulties when you did the online tests and learned from online video clippings?  
當你在網上做測試、看影片學習時，有沒有遇過什麼困難？
5. Do you think that flipped classroom could help you become an active learner? Is there any example to give to support/not support your claims?  
你認為翻轉教室能讓你更積極學習嗎？是否有任何的例子來支持/不支持你的觀點？
6. Could you tell me what learning skills you have developed during the flipped classroom experience?  
你在翻轉教室的經驗中發展了哪些學習能力？
7. Could you tell me how you could transfer the learning skills that you have developed during the flipped classroom experience to other subjects?  
你會如何將在翻轉教室活動中發展出來的學習能力運用到其他學科？
8. What do you like the most about flipped classroom?  
你最喜歡翻轉教室的哪方面？
9. What do you like the least about flipped classroom?  
你最不喜歡翻轉教室的哪方面？
10. If the flipped classroom activities will be conducted again, do you have any suggestions to make them maximise their learning outcomes?  
如果翻轉課堂活動將會繼續實施，你會提供什麼建議，使其發揮最大的成效？
11. Do you have any other comments that you would like to give?  
你還有沒有其他關於翻轉教室的意見？

**APPENDIX D: STUDENTS' PERFORMANCE IN PRE-TESTS AND POST-TESTS**

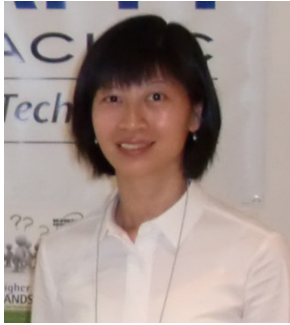
Class	Class No.	Pre-test	Post-test	Difference
2B	1	0	0	0
2B	2	1	5	4
2B	3	0	1	1
2B	4	5	8	3
2B	5	0	4	4
2B	6	1	7	6
2B	7	6	7	1
2B	8	8	9	1
2B	9	4	9	5
2B	10	0	2	2
2B	11	0	5	5
2B	12	0	1	1
2B	13	0	6	6
2B	14	2	4	2
2B	15	1	1	0
2B	16	0	7	7
2B	17	4	8	4
2B	18	0	0	0
2B	19	0	3	3
2B	20	6	3	-3
2B	21	0	0	0
2B	22	0	0	0
2B	23	4	10	6
2B	24	0	9	9
2B	25	0	0	0
2B	26	0	9	9
2B	27	0	7	7
2B	28	0	1	1
2B	29	0	0	0
2B	30	Withdrawn	Withdrawn	
2B	31	3	0	-3
2C	1	0	0	0
2C	2	0	0	0
2C	3	0	0	0
2C	4	0	2	2
2C	5	0	0	0

<b>Class</b>	<b>Class No.</b>	<b>Pre-test</b>	<b>Post-test</b>	<b>Difference</b>
2C	6	0	5	5
2C	7	1	0	-1
2C	8	0	1	1
2C	9	0	0	0
2C	10	0	0	0
2C	11	0	2	2
2C	12	0	0	0
2C	13	0	0	0
2C	14	0	0	0
2C	15	0	0	0
2C	16	0	0	0
2C	17	0	0	0
2C	18	Withdrawn	Withdrawn	
2C	19	0	2	2
2C	20	0	0	0
2C	21	0	0	0
2C	22	0	0	0
2C	23	0	0	0
2C	24	1	1	0
2C	25	0	0	0
2C	26	0	0	0
2C	27	4	4	0
2C	28	0	1	1

Note: There are 10 items in both pre-tests and post-tests.

## BIOGRAPHY

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