3 Researching into a MOOC embedded flipped classroom model for college English Reading and Writing course

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Abstract

There is obvious pressure for higher education institutions to undergo transformation now in China. Reflecting this, the computer and information technology give rise to the development of a Massive Open Online Course (MOOC) embedded flipped classroom. Flipped classroom approaches replace the traditional transmissive teaching with engaging in-class and pre-/post-class work. This paper provides an overview of relevant literature about the emergence of the flipped classroom and its links to pedagogy and educational outcomes, followed by an analysis of the survey results of a one year experiment using a flipped classroom approach which involved 800 students at Shenzhen University. The questionnaire completed by 230 students at the end of the second semester investigated students' attitudes as well as their perceived benefits and effects of this new approach. The results reveal that the majority of students preferred the flipped method, and over 50% of them felt they were making good progress in many aspects of their English language learning. The paper argues that a MOOC embedded flipped approach promotes student active, autonomous, and collaborative learning skills, and it contributes to a better understanding of technology-enhanced, student-centred learning environments.

Keywords: MOOCs, flipped classroom, active learning, college English course, China.

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1.   Introduction

College English, a compulsory course in all higher education curriculum in China, is undergoing reforms in both content and teaching pedagogy. College English curriculum requirements, commissioned by The Ministry for Higher Education (2007), advocate "a computer-assisted and classroom-based teaching model" (p. 8). Wang and Wang (2011) point out that computer and information technology can assist student-centred and teacher-facilitated teaching models at the tertiary level.

While MOOCs have become a focus in the Chinese education field for their merits as 'open', 'online', and 'massive', blended learning offers potential solutions to the problems experienced in MOOCs, e.g. a high drop-out rate. By 'blended learning', I use the definition of the North American Council for Online Learning as reported in Camahalan and Ruley (2014),

> "a learning approach that combined the best elements of online and face-to-face learning (NACOL, 2013). […] According to the North American Council for Online Learning (NACOL, 2013), blended learning is likely to emerge as the predominant model of the future, and [will] become far more common than face-to-face or online learning alone" (pp. 2-3).

Flipped classroom approaches are one type of blended learning. As claimed by Abeysekera and Dawson (2014), in a flipped classroom, "the information transmission component of a traditional face-to-face lecture […] is moved out of class time" (p. 2) and presented to learners outside class, for example in the form of a MOOC. Class time is replaced with active and collaborative tasks and personalised teaching.

In the academic year 2014-2015, the Shenzhen University adopted the flipped method in the college English Reading and Writing course. Part of teaching materials was put into a MOOC, using the nine flipped classroom design principles proposed by Kim, Kim, Khera, and Getman (2014), further discussed

below. A group of 800 students was required to complete the MOOC learning prior to their weekly two hour face-to-face English classes.

In China, traditional teacher-centred language teaching models prevail in education at secondary school level. So when students start undergraduate courses, they need to adjust to the student-centred new approach. This study aims to investigate students' attitudes as well as their experience of the flipped classroom approach, which was totally new to them. The findings will help designers and educators better understand technology-enhanced and student-centred learning environments so as to improve student learning experiences.

2.   Literature review

According to Andrews, Leonard, Colgrove, and Kalinowski (2011), active learning is the kind of learning that happens when "an instructor stops lecturing and students work on a question or task designed to help them understand a concept" (p. 394). The characteristics associated with active learning are conscientiousness, concentration, and a deep approach to learning, which has a positive impact on student achievements (Richardson, Abraham, & Bond, 2012). The flipped classroom approach creates the environment which makes it possible to let students engage in active learning (Berrett, 2012; Milman, 2012; Strayer, 2012). This active learning is encouraged by a range of interactive activities, which are originally the information-transmission component of a traditional lecture (Abeysekera & Dawson, 2014). Abeysekera and Dawson (2014) outline the following set of pedagogical approaches for the flipped classroom:

- move most information-transmission teaching out of class;

- use class time for learning activities that are active and social;

- require students to complete pre- and/or post-class activities to fully benefit from in-class work.

As mentioned by Kim et al. (2014),

> "[f]lipped classroom models have attempted to address these challenges by allocating more class time for active learning and by leveraging accessibility to advanced technologies to support a blended learning approach. […] Teachers in turn are able to commit more in-class time to monitoring student performance and providing adaptive and instant feedback to an individual or groups of students (Fulton, 2012; Herreid & Schiller, 2013; Hughes, 2012)" (p. 37-50).

English learning is the process of constant practicing and outputting, instead of listening to lectures and mere inputting (He, 2003).

The following nine design principles for the flipped classroom proposed by Kim et al. (2014, pp. 43-46) guided the design of the English Reading and Writing flipped classroom:

- provide an opportunity for students to gain first exposure prior to class;

- provide an incentive for students to prepare for class;

- provide a mechanism to assess student understanding;

- provide clear connections between in-class and out-of-class activities;

- provide clearly defined and well-structured guidance;

- provide enough time for students to carry out the assignments;

- provide facilitation for building a learning community;

- provide prompt/adaptive feedback on individual or group works;

- provide familiar technologies easy to access.

O'Flaherty and Phillips (2015) searched eight academic literature databases and internet resources worldwide, and found 28 empirical study papers looking at flipped classroom approaches in higher education. Excluding four papers which did not discuss the outcomes of a flipped classroom approach, 24 studies all suggested the positive impact of this model. Bishop and Verleger (2013) reviewed 24 studies on the flipped classroom approach and had the same conclusion.

Our college English Reading and Writing course used such an approach which provided students with access to MOOC lectures prior to in-class sessions, so that students were prepared to better participate in interactive and further activities in class, such as problem-solving, discussions, presentations and debates. This study aims to investigate if such an approach is appropriate for the Chinese context, in particular to answer the following research questions:

- What are students' attitudes towards a MOOC and flipped classroom approach?

- What are the perceived benefits in terms of their English proficiency and study skills?

3.   Research methods

This study was carried out in the 2014-15 academic year, involving 800 students (non-English majors) of the college English Reading and Writing course in 23 classes. The average class size was around 35 students. This was a compulsory course with eight to 12 credits. An English placement test divided all freshmen (approx. 7,000 students) into three levels at the beginning of the academic year. The top 10% of the freshmen, who were called 'Level-A' students, were required to use a MOOC flipped classroom approach for this course.

Eleven units of teaching materials from the English Reading and Writing textbook were produced into a MOOC (Figure 1) on the University Open

Online platform (https://mooc1.chaoxing.com/course/80447257.html)[2]. This platform can record students' performances, video-watching completion rate, visit frequency, and task completion rate. The MOOC covered key vocabulary, reading comprehension, text analysis and writing skills. 150 minutes of video of each unit ranging from formal teaching to activities with video clips for students to complete every two weeks. Level-A students were required to complete self-paced MOOC learning before class, followed by two hour, face-to-face, in-class learning every week. The face-to-face sessions were devoted to interactive and collaborative activities: peer interaction activities (group discussion or group project), and teacher-student interaction activities (presentation with feedback, project with feedback, debate with feedback or writing with feedback). Acting as facilitators instead of instructors, teachers' main roles were checking understanding, facilitating learning, and further exploring the theme of each unit. The teaching experiment lasted for 32 weeks, i.e. two semesters.

Figure 1. Screenshot of the MOOC for the college English Reading and Writing course

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2. A MOOC platform in China hosted by Shenzhen University.

To investigate students' perception of the approach and the perceived benefits in terms of their English proficiency and study skills, 230 Level-A students (33% male and 67% female) were randomly invited to complete an online questionnaire in a computer lab. The questionnaire[3] consisted of three parts: overall attitudes on flipped classroom model; self-evaluation of the impact on their learning; and overall satisfaction with this learning approach as well as the study time outside the classroom each week. Both multiple-choice and open-ended questions were designed. The questionnaire was in Chinese to avoid misunderstanding.

4.   Results

The results reveal that the majority of students preferred flipped methods compared with traditional teaching approaches, and although there was no proficiency test to prove their progress, a high percentage of students felt that their English reading and writing skills had been improved. Below are the key findings from the survey.

4.1.   MOOC and flipped classroom model, collaborative and peer learning style

Table 1 below gives a summary of respondents' attitudes towards (1) the MOOC and flipped classroom model, (2) collaborative learning style, and (3) peer learning style.

Table 1.   Attitudes to the new model, and collaborative and peer learning style

	Strongly agree	Agree	Not sure	Slightly disagree	Disagree
I like this MOOC and flipped classroom learning model.	16.1%	40.9%	33.5%	5.2%	3.9%
I like this collaborative learning style.	16.1%	59.6%	15.9%	6.5%	1.4%
I like peer learning.	10.4%	48.7%	25.7%	9.6%	5.2%

3. Available from https://research-publishing.box.com/s/fx4wy2zr61ep0f5cblvqb9yzjqxcy9v3

On average, combining those who agree and strongly agree, 57% of the respondents were positive towards the MOOC flipped classroom model, while 9% did not accept this change. Over a third of respondents (33.5%) were not sure. The positive attitude was supported by comments in the open section:

"This is fashionable and encourages us to do more autonomous learning and independent thinking" (Student A).

"This new model helps us explore in language learning and the best thing is I can set my own pace to study and allocate time accordingly" (Student B).

As lecturing on vocabulary or language points in class has been replaced by MOOC, teachers' responsibilities were shifted to more personalised tutoring that suited the needs of each student. Students responded in the questionnaire by saying:

"My teacher gave me feedback each time I did my oral project or writing assignments. I feel closer to my teacher, compared with the other teachers lecturing mainly in the class" (Student C).

Teamwork was popular in this MOOC flipped classroom teaching model. Students were divided into groups (usually four students to one group) to do their oral projects or research projects. 76% of respondents liked collaborative work, whilst only 8% gave negative evaluation. 16% of them were not sure.

Almost 60% of respondents favoured peer learning and agreed that they learnt from each other, but 15% of them held the opposite view. Around 25% of respondents were uncertain. There was further evidence from the open questions that support the positive attitude:

"I like my teammates in a particular way and for sure we will stay in the same team in the possible future opportunities. I never realised that I can learn so much from my classmates" (Student D).

Of those who felt negative about it, one student said in the open question:

> "I am not used to this new stuff and I haven't seen anything beneficial" (Student E).

It is not surprising that some respondents were negative or unsure about the new module. As explained earlier, secondary education in China is predominantly teacher-centred, so when students first enter university, they find it hard to adjust to the new teaching style in which they have to take control of their studies.

4.2.   Perceived progress

On average, 51% of the respondents felt that they had made progress in English reading and writing, as evidenced in the open comments:

> "I have my vocabulary size enlarged and I know more about how to use them and I have learned how to use different sentence structures and phrases" (Student F).

> "I have acquired knowledge from the MOOC lecturing and have learned to use them in my writing and speaking. I have more sophisticated words to choose from when I am writing" (Student G).

It is worth noting is that a high proportion of respondents were uncertain if they had made any progress. This might be due to the following reasons: (1) they had never been asked these types of questions so they were unable to make a judgement or evaluate their own progress, and (2) they evaluated their progress in terms of their tests and exam results rather than their communicative competence.

4.3.   Overall satisfaction

59% of respondents were satisfied with this MOOC and flipped classroom learning model, with 12% unsatisfied, and the remaining unsure.

4.4.   Time spent on learning outside the classroom

When asked how many hours on average were spent on English study after class, 14.4% of respondents spent more than ten hours per week, and 58.7% students spent between five to ten hours per week. This percentage is significantly higher than Level-B students who did not take part in this experiment, among which 33% of students spent 1-2 hours per week, 25% spent two to three hours, and 19% spent three to four hours.

5.   Discussion

The above findings suggest that a MOOC flipped classroom model is an effective combination of internet technology and face-to-face teaching for teaching college English. This approach appears to offer two clear benefits: students appear to be more motivated and engaging; and they spend more time learning outside their class hours. This supports Richardson et al.'s (2012) definition of active learning, when learners take initiative and become more conscientious, which has a positive impact on the classroom learning, as teachers also noticed more interactions in the classroom.

Freed from traditional language classrooms, students have realised that language learning needs constant practicing, interaction, and personalised feedback from teachers. Students benefit from having more time after class to spend on areas that need strengthening. The high satisfaction rate (59%) with the new teaching model indicates that the combination of MOOC with interactive activities using the designing principles as proposed by Abeysekera and Dawson (2014) worked in this study. This does not mean that there is no room for improvement. On the contrary, as 41% were either not satisfied or unsure, there is huge room for improvement.

We also need to bear in mind that university students' motivation for learning English is largely instrumental. In China, all employers require the result of the College English Test (CET), which is a language proficiency test taken by

university students after graduation. As the MOOC flipped classroom model is not designed for passing the exam, students might resist the innovation. We need to raise student awareness that high exam scores do not necessarily equal language competence by creating authentic communication opportunities.

In short, the findings from this study suggest that this new approach, favoured by the majority of students in previous studies (Bishop & Verleger, 2013; O'Flaherty & Phillips, 2015), can be successfully implemented in the Chinese educational context. Students will need more guidance, such as an induction programme, to teach them autonomous and online learning skills before putting them on the courses that use flipped classroom approaches.

6. Conclusion

This study researches into the MOOC flipped classroom model piloted across Level-A students taking the college English Reading and Writing course at Shenzhen University. The study found that 57% of respondents surveyed liked to learn from the MOOC outside the classroom before meeting the teacher in the class to engage in interactive language activities. 59% surveyed were satisfied with the course delivered using this model, with 51% feeling they had made progress with their English reading and writing.

The paper argues that the flipped classroom approach is applicable to the Chinese higher education context, and that it can help to improve active, autonomous, and collaborative learning skills. The paper hopes to contribute to a better understanding of technology-enhanced and student-centred learning environments.

The limitation of this study is that it primarily relied upon the participants' perceptions of their own experiences in the flipped classroom to evaluate the quality of the teaching model. Further research is needed to link students' perceived benefits with attainment so as to establish the effectiveness of the flipped classroom approach.

The current study is based on the class size of 35 students approximately. Future research can explore if this MOOC embedded flipped classroom teaching model is applicable to large English as a foreign language classrooms in China.

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