Evaluating the flipped classroom approach in Asian higher education: Perspectives from students and teachers

Amy S Ha¹*, John O’Reilly¹, Johan Y Y Ng¹ and Joni H Zhang²

Abstract: The flipped classroom approach has been gaining substantial momentum and is well received in Asia. Using a qualitative approach, this study examined how the flipped classroom approach affects the teaching and learning experiences of students and teachers in Asian higher education. Five Faculty of Education courses were examined in this study. Five individual interviews were conducted with the course instructors and three focus-group interviews were conducted with a total of 12 students. Data was analysed by thematic analysis. Using the self-determination theory (SDT) as a theoretical framework, five themes emerged. The results of this study suggest that the flipped classroom approach has substantial potential to fulfil the three basic cognitive needs among university students in the field of education. Most students in this study felt positive about the flipped classroom approach and students’ and instructors’ positive feelings can be explained using the main components of the SDT. Subsequently, this paper presents a summary table on recommended strategies for before, during and after-class implementation of the flipped approach.

Subjects: Educational Research; Education Studies; Higher Education; Study of Higher Education; Teaching & Learning; Teaching & Learning

Keywords: Flipped classroom; higher education; qualitative; student; teacher; self-determination theory

1. Introduction

With the significant increase of interest in student-centred active learning in higher education in recent years (Roehl, Reddy, & Shannon, 2013; Wright, 2011), flipped or inverted classroom models have captivated educators worldwide (O’Flaherty & Phillips, 2015). The “flipped classroom” is a teaching model whereby the traditional behaviouristic “lectures” takes place outside of class, typically via pre-recorded videos prior to in-class sessions, whereas teacher-student contact hours...
are replaced by more student-centred, active learning activities such as problem-solving discussions and debates (Bishop & Verleger, 2013). This pedagogical approach offers students the flexibility to learn at their own pace using electronic resources outside classes, and spares class time for interactive activities, and by doing so, students are likely to be more active, engaged and enthusiastic during learning (O’Flaherty & Phillips, 2015).

1.1. Related work
In view of the potential advantages, the effectiveness of the flipped classroom approach has been empirically tested in courses of different disciplines, including medical and health (Critz & Knight, 2013; McLaughlin et al., 2014; Tune, Sturek, & Basile, 2013), business (Findlay-Thompson & Mombourquette, 2014), mathematics (Jungić, Kaur, Mulholland, & Xin, 2015), and various other science subjects (Schultz, Duffield, Rasmussen, & Wageman, 2014; Sun, Wu, & Lee, 2017). Moreover, it has been shown that this flipped approach has been well received by Asian students (Chua & Lateef, 2014), and is appropriate for Hong Kong students (Sharma, Lau, Morris, Doherty, & Harbutt, 2014), even for those who are more used to traditional methods such as the “spoon-fed” teaching method (Kember, 2009). Despite a range of studies having been conducted to examine the efficacy of flipped classroom delivery, to our knowledge, very few have been completed in a Chinese, discipline-specific setting. Discipline-specific study designs are as important as broader studies because students from different disciplines may have different expectations of teaching styles and course materials (Peacock, 2001). For example, Hill, Tomkinson, Hiley, and Dobson (2016) found that Engineering students express a significantly stronger preference for a logical learning style over visual or verbal learning styles, when compared with Humanities students. It has also been reported that many of those studies tend to fall short on addressing the underlying mechanisms that helps or improves the efficacy of the flipped approach, because a theoretical framework has not been applied to aid the design or analyses of the study (Abeysekera & Dawson, 2015).

It is generally agreed that one of the most important factors that determines the success of a flipped class is students’ level of motivation to undertake substantial out-of-class work (i.e. reading pre-class materials and watching videos) (Abeysekera & Dawson, 2015). It is therefore important to examine what would enhance students’ level of motivation when a flipped approach is used. The prominent Self-Determination Theory (SDT) framework argues that for one to feel effective and motivated, there are three basic psychological needs that should be fulfilled: need for competence, need for autonomy and need for relatedness (Deci & Ryan, 2002). The need for competence refers to the feeling of having the ability to complete a task. The need for autonomy refers to the feeling of volition when performing a task. The need for relatedness refers to a sense of belonging and support from a social group. Studies have shown that fulling these three needs would promote students’ motivation to learn (Abeysekera & Dawson, 2015). Therefore, in this study, the SDT framework was used to develop interview questions, guide the analyses of the qualitative findings, and lastly, to identify practical implementation strategies. The SDT has been widely used in a large number of studies within the education literature (Guay, Ratelle, & Chanal, 2008) and it has been suggested that the SDT represents a useful theoretical lens for exploring flipped classrooms (Abeysekera & Dawson, 2015).

Thus, using a qualitative approach, this study aimed to examine how the use of a flipped classroom approach affects the teaching and learning experiences of students and teachers, when compared to the traditional approach, from the perspective of students and instructors in an urban university. The following research questions were addressed:

What were the elements of the flipped classroom approach that students or instructors recognize as helpful in students’ learning processes and why were these elements helpful?
What were the elements of the flipped classroom approach that students or instructors recognized as challenging and require modification; were these elements challenging and what are some practical solutions?

2. Methods

2.1. Participants and research context
Five instructors within the Faculty of Education at a public university in Hong Kong were involved in this study. The five Faculty of Education courses examined in this study are described in Table 1. All examined courses were conducted within two academic years between 2015 and 2017, as part of a standard curriculum for either undergraduate or postgraduate education in the areas of educational psychology, sports science and physical education, and educational administration and policy.

Each instructor re-designed one of their courses using the flipped approach, with a total of five courses, by incorporating out-of-class materials (e.g. videos, readings, e-resources, etc.). Up to half of the content of each included course was flipped, with the aid of tools such as PowerPoint, Blackboard & YouTube, Online video hosting, and ECHO360 software.

2.2. Student and instructor interviews
Qualitative responses were collected via focus-group interviews with students and one-to-one interviews with instructors. Based on the self-determination theory (Deci & Ryan, 2002), a semi-structured interview protocol was developed for student and instructor interviews, respectively. The semi-structured interview format enables the use of supplemental questions to clarify and explore participants’ responses in greater detail (Powell & Single, 1996). The focus-group questions

| Instructor’s discipline | Gender | Academic rank | Flipped courses | Non-flipped courses |
|-------------------------|--------|---------------|-----------------|--------------------|
| Educational Psychology  | F      | Associate Professor | Supporting Primary School Students with Special Educational Needs (Class A; postgraduate) | Supporting Primary School Students with Special Educational Needs (Class B; postgraduate) |
| Educational Psychology  | M      | Associate Professor | Psychology of Learning and Teaching (Class B; postgraduate) | Psychology of Learning and Teaching (Class A; postgraduate) |
| Sports Science and Physical Education | F | Professor | Pedagogy of Primary Physical Education (undergraduate) | Pedagogy of Sports and Adapted Physical Activities (postgraduate) Adapted Physical Education and Sports (undergraduate) |
| Educational Administration & Policy | F | Assistant Professor | Qualitative Methods in Educational Research (Class A; postgraduate) | Qualitative Methods in Educational Research (Class B; postgraduate) |
| Sports Science and Physical Education | M | Instructor | Introduction to Exercise Physiology (undergraduate) | Introduction to Exercise Physiology (undergraduate) |
aimed to probe students’ views on flipped classroom sections in four areas: course materials, class activities, assessment, and how it is compared with a traditional teaching method. Similarly, the purpose of one-to-one interviews was to explore how instructors felt different about teaching a flipped class, when compared with a non-flipped class. In addition, this helped to gain further feedback from instructors on the feasibility of the flipped approach.

Three focus-group interviews with a total of 13 students from flipped courses were conducted. Focus groups, instead of one-to-one interviews were undertaken to generate deeper and richer data from students with similar backgrounds in terms of age, discipline and the course they attended (Mertens, 2014). For instructors, due to potential differences in teaching practices, beliefs and attitudes, one-on-one interviews were conducted instead of focus groups. The interviews lasted around 30 min with instructors, and 60 min with students. All interviews were conducted in a university setting upon participants’ availability outside classes. Cantonese (i.e. the first language of all participants) was mainly used in all interviews, except for an interview with an instructor whose first language is English.

All interviews were audio-taped and transcribed verbatim. Confidentiality was maintained by creating pseudonyms for each participant. Data was analysed by thematic analysis. All transcripts were read and labelled with initial codes to identify similar and different responses to themes. In order to strengthen the trustworthiness of our data, the themes and representative quotations were identified with agreement among authors (Graneheim & Lundman, 2004). Although translation from Cantonese to English might cause potential data losses, the use of a bilingual researcher who has advanced sociocultural competence and knowledge on the place of the study helped to maximize the credibility and conformability of our data. This strategy is commonly seen in cross-language qualitative research (Squires, 2009). All participants in the study provided written informed consent. The procedures of the study were also reviewed and approved by an ethical review committee of the university.

3. Results

3.1. Themes

All students and almost all instructors showed positive attitudes and responses towards their flipped classroom experiences. Using the SDT framework, five themes emerged from three focus-group scripts (from students) and five individual interviews (from instructors). The first three themes articulated students’ gains from flipped classroom approaches, including “enhance perceived competence”, “provide a foundation and platform for in-depth learning”, and “provide flexibility and trigger students’ motivation for self-learning”. The fourth theme was generated to highlight the need for “start-up facilitating strategies”, and the last theme covered the “implementation strategies” to sustain the flipped approach.

3.1.1. Enhance perceived competence

All students reported positively about the pre-class element, especially video viewing, as it enables students to develop an understanding of the course content prior to class. Having the basic knowledge enhances students’ perceived competence of learning in class and motivates students to pay more attention during class time.

[After watching the video, I] have more confidence in class … confident to look at the teacher and feel more confident to answer questions. (Group C, student 4)

As I have the basic concept in my mind … during discussion in class, I could quickly understand the views of others. This gives us more opportunity to interact and I have more opportunity to express my views. Without preparation, I do not have the nerve to talk. (Group A, student 2)

3.1.2. Provide a platform for in-depth learning

Students’ active engagement appeared to facilitate in-depth learning during the increased class time spent on sharing, discussion and debates. Being able to elicit comprehensive insights through
interaction with classmates and instructors was the most frequently reported gain among stu-
dents and instructors.

Everyone has different ideas from watching the same video clip. If a teacher provides
a single input in class [as traditional approach], the thought is usually limited to a single
direction ... if we watch the video [at home], and we discuss it in class, we would probably
brainstorm new ideas. This is a part in learning. (Group C, student 5)

I found that you will only have solid ideas to discuss with others after you watch [the
video]. ... If you haven't watched it, you would be using your past experience, your old
thoughts to discuss. Then, I don't think I would have learned anything. (Group A, student 1)

We usually analyse things from its literal meaning [under the traditional approach]. While
through real cases, group debates, and case studies [under the flipped approach], we could
generate clearer ideas on what the meanings are and understand how to implement and
apply them when I need to. (Group A, student 1)

[In flipped approach,] there was more time for discussion and presentation ... I felt that their
homework was of higher quality. That's just my general impression after marking them.
Their lesson plans and essays were more insightful and meaningful than before [i.e. using
the traditional approach]. (Instructor 4)

3.1.3. Provide flexibility and trigger students’ motivation for self-learning

Compared to the traditional teaching approach, the use of educational video for pre-class
preparation was generally welcomed as it allows flexibility for students to learn at their own
pace by having the option to access the videos at their own time. A student stated that such
flexibility “gives me more time to understand and learn” at home, and “speeds-up the train of
thought in class” (Group A, student 2). Also, video watching was perceived as an easy way to
learn, and could even ignite a spark of interest in students to self-learn, as stated in the
following quotes:

I think [watching video] is quite relaxing. I could stay home, choose a leisure time, and
a comfortable place to watch the video voluntarily. If I am interested in it, I would watch it
again. Watching it doesn't feel like learning in class. It's good easy learning. (Group B,
student 5)

Those flipped classroom videos are interesting, and I want to learn more after watching the
video. I mean I’d probably watch more relevant videos, do a bit more, and watch other video
clips that have not been recommended. (Group B, student 4)

The advantages mentioned above, however, vanished when the access time of pre-class materials
was limited or inadequate, as reflected in a students’ quote:

Some instructors uploaded the materials at the last minute, say putting up the materials in
the afternoon for tomorrow’s class. I have little time to read the materials ... and then I read
when doing [activities] in class.” (Group A, student 2)

Students generally voiced that being able to access all pre-class materials at the start of the
course could be more helpful for their learning and preparation, especially for those who are part-
time students. According to the SDT, the success of pre-class materials can be explained by
satisfying students’ need for autonomy as well as competence. As reflected in the quotes, students
felt that they had the freedom to access the pre-class materials (need for autonomy). More
importantly, students also felt that videos were easy to learn from (need for competence).
However, one possible drawback of pre-class materials is that if students are given too little
time to access them, the potential advantages can be reversed.
3.1.4. Start-up facilitating strategies

Despite the perceived advantages of the flipped approach, Hong Kong students that are traditionally more adapted to a “spoon-fed” approach, required a “kick” to help them familiarize themselves with the self-learning nature of the flipped approach. Strategies were needed to help these students understand the potential benefits of self-learning. A common effective strategy mentioned by students and instructors was to link specific elements (e.g. flipped exercises) to assessment. Without such linkage, an instructor found that “only 50% of students read the pre-class reading”. (Instructor 2) Other instructors explained the phenomenon:

Students were too used to just sit and listen to teachers. Previously, they did not participate in university class, at least not in the courses I taught … If there were more incentives and if more things were taken into account for assessments, they would take it more seriously and put more effort in preparing for discussions. (Instructor 4)

From the students’ perspective, assessment results (i.e. grades) appear to be the largest contributor to motivation for them to learn, as revealed by a student:

In Hong Kong, the aim of studying is to get good marks. If your get a bad grade, job seeking would be difficult in future." (Group C, student 5). Giving marks for completing pre-class exercises was therefore considered as “a huge motivation” (Group B, student 2).

It is like an encouragement … if there are no marks rewarded, you’d feel like the curriculum doesn’t take flipped aspect into consideration.” (Group A, student 2).

Apart from using marks as an extrinsic motivator, instructors played a pivotal role in initiating and promoting the flipped approach at the start of each course, as reflected in instructors’ and students’ quotes:

It's our job as teachers to explain to them that, yes it is some workload before class, but the benefit would be, it is a more efficient way for them to learn, hopefully a more interesting way for them to learn, and actually in the long run, perhaps an easier way for them to score well in their assessment. (Instructor 2)

Teachers need to promote this [flipped approach] at the start. It was slightly intimidating the first one or two times watching the video, but after that, it is understandable and [I] would take initiative to watch. Even in the early morning before class, I watched it, because if you didn’t watch it, you might not follow the class easily. If you watch it after class, it is no longer as meaningful as it once was. (Group A, student 1)

The lack of start-up strategies might weaken or reverse the potential advantages of the flipped approach. For students who did not complete the pre-class exercise, some instructors provided a review of the pre-class materials during class time, before the discussion. The review ought to be concise and “should not replicate usual lectures”, as reflected in students’ quotes:

If you keep repeating the content, it is meaningless for me to watch [the pre-class materials]. (Group C, student 5).

When pre-class materials were repeated in class, students become less focussed in class, and do not want to listen as I have already learnt that [before class]” (Group B, student 3).

The importance of starting-up facilitating strategies should be highlighted because they are an effective means of helping students feel that they are capable of learning from a flipped approach. Based on the SDT, the sense of competence is to feel capable about completing a certain task. Therefore, when learning objectives, advantages and most importantly, instructions of the flipped elements are explained well at the beginning of the course, students’
understanding of the flipped approach is enhanced and therefore students’ need for competence can be addressed.

It is also important that instructors of flipped classes carefully monitor students’ adherence to accessing pre-class materials as such progress monitoring can serve as a proxy for instructors to understand how well students are accepting the flipped approach. For example, it may be useful for an instructor to check how many students had accessed the pre-class materials before class, and adjust the in-class delivery of materials accordingly.

3.1.5. Implementation strategies
Once the flipped approach was initiated, implementation strategies are crucial to elicit student intrinsic motivation in learning. Some instructors suggested that the time required for pre-class preparation should not be longer than 10 min, as they anticipated that “if you ask them [i.e. students] to spend 1–2 h each week, they will not do it.” (Instructor 3) Some students preferred a 3- to 4-min video as pre-class preparation per class. One student was not impressed with the flipped approach and addressed that adding pre-class exercises increased their workload unless the class time was shortened accordingly. However, some students considered a weekly 50-min video was bearable and interesting. One student commented that:

Initially, I thought watching a 50-minute video would kill me, but then when you find out that she [i.e. the instructor] talked very interestingly and her presentation is very lively. You would find that all examples in the videos are very attractive. (Group A, student 2)

These contrasting views suggest that students’ acceptability towards pre-class materials (pre-class videos in this case) may depend more on the materials’ content and attractiveness rather than its duration only. To increase the acceptability of pre-class materials, it is necessary for instructors to carefully consider students’ background and language, and how to make the video more interesting and appealing. For students whose native language is Cantonese but were asked to watch an English video or answer questions in English, a student commented that “not all classmates are good at English. Sometimes I don’t understand what it is saying when it is all in English.” (Group B, student 4). With regards to this situation, it may be helpful “to make sure that there are subtitles, and make sure the English are not too difficult and understandable” in pre-class videos, as an instructor mentioned (Instructor 3). Similarly, educational materials provided to students should be tailored to suit their level of understanding. Some students stated that “when teachers chose videos that are way too hard, it would lower my interest in the materials and the flip classroom teaching style”. (Group B, student 5)

Secondly, selected videos “need to match the content of what was learnt” and should be relevant when follow-up activities are conducted in class (Group C, student1). When instructors have not mentioned or discussed the content of pre-class materials in class, a student commented that “I felt like I was doing an additional piece of homework before class instead of feeling it equipped me for class and demonstrate what I learnt.” (Group B, student 1) Therefore, it is important for instructors to consider “the logic of teaching and relatedness of pre-class and in-class materials provided” when the flipped approach is adopted (instructor 2). Compared to instructors with less preparation, instructors who created their own-videotaped lectures and redesigned the teaching plan and course assessment plan appear to yield more perceived benefits. An instructor observed that “compared to previous teaching approaches that did not include video and assignments, I found that they [i.e. students] are more engaging” in the flipped approach. (Instructor 3) This observation suggests that instructors with a high readiness to adopt the flipped approach are more likely to maximize the potential advantages of the flipped approach. Moreover, positive student–instructor interactions and relationships were found to be beneficial for eliciting students’ intrinsic motivation in learning. Some students stated that “Reason for keeping up with the [pre-class] reading is that I like to interact with the instructor.” (Group A, student 2) and “[instructors] who are enthusiastic could drive you to put more effort in learning, and this could help you to learn more with half the work.” (Group C, student 5). A student even stressed that:
The presence of the instructor in the videos is quite important to our learning motivation ... when professor talked to us, what we learnt from her is her attitudes, her views on things, leading me to reflect instantly on my beliefs and attitudes. I think this is education of humanity. (Group A, student 2)

It is worth highlighting that the presence of the instructor in pre-class videos may be considered important in this study population because the majority of students are pre-service teachers undertaking an education degree (undergraduate or postgraduate). It is therefore logical that these students are inclined to learn from their teachers' delivery and teaching styles (e.g. the instructors' beliefs and attitudes).

Overall for the flipped approach, strategies aimed at enhancing student–instructor interactions via pre-class materials (e.g. videos) and in-class delivery (e.g. time allocated for an overview of pre-class materials) could be an effective means of improving the flipped approach. In this case, flipped teaching approach requires instructors' time, efforts and readiness in preparing out-of-class teaching materials at the initiation phase, adjusting lesson plans at the implementation phase, and continuous learning to modify its delivery to facilitate students' learning. An instructor indicated that the need of continuous learning was essential because “to critically appraise oneself for further improvement, it is important to attend seminars, use the expert resources on campus, discuss with fellow teachers who are also using the flipped approach, seek students' feedback on what worked well and what didn’t”. (Instructor 1)

Regarding the overall experience in implementing the flipped approach, an instructor observed a discrepancy of engagement levels among students from different years of study:

First year students may be more easily convinced that flipped approach is better because they have not to this point taken three or four years of traditional method of university level of teaching yet. (Instructor 1)

Forth years students simply want to pass and graduate, and thus “these students may not commit the time required before class to make the most of whatever materials of e-learning resources (e.g., pre-class materials) were available to them before class anyway” (Instructor 1).

Thus, the instructor believed that “the specific group of students, what subject and which year, are important points to consider, when we want to get the students to embrace or be more involved in this method.”

4. Discussion

4.1. Which elements of the flipped classroom are recognized as helpful in the students' learning process and why were these elements helpful?

The results of this study suggest that the flipped classroom approach has substantial potential to fulfil the three basic cognitive needs among university students in the field of education. Table 2 is a summary of the proposed implementation strategies before, during and after class. Most students in this study felt positive about the flipped classroom approach. Students' and instructors' positive feelings can be explained using the main components of the SDT. First, it has been reflected by students and teachers that relevant and concise pre-class materials are helpful for increasing students' confidence in understanding course materials. Therefore, the first basic cognitive need, sense of competence, could be effectively fulfilled by the presence of well-designed pre-class materials (e.g. engaging and relevant videos). Second, students and teachers expressed that pre-class materials, combined with technological pedagogy, allowed them to learn with freedom and comfortably at their own pace. Therefore, the second basic cognitive need, sense of autonomy, was fulfilled mainly by pre-class materials delivered via technological pedagogy. Lastly, compared to traditional teaching, more class time can be allocated for human
| Table 2. Summary of implementation strategies | Recommended | Not recommended |
|---------------------------------------------|-------------|-----------------|
| **Before class**                            | Pre-class materials and tasks should be provided | Pre-class materials uploaded at last minute |
|                                             | Provide enough time and incentive (e.g. marks) for students to complete pre-class materials | Long and difficult to understand videos |
|                                             | Provide relevant and engaging videos no longer than 10 minutes as one source of pre-class material | Assuming same level of understanding and adherence to pre-class materials among all students |
|                                             | Presence of instructor in pre-class videos | |
|                                             | Explain advantages of the flipped approach at the beginning of the course | |
|                                             | State clear learning objectives, provide defined and logical guidance during the first lesson | |
| **During class**                            | Brief recap of pre-class materials at the beginning of class | Repeating pre-class materials |
|                                             | Provide clear connection between pre-class materials and in class activities | |
|                                             | Design in class activities and discussions relevant to pre-class materials | |
|                                             | Encourage students to reflect upon and apply knowledge gained from pre-class materials | |
| **After class**                             | Continuous monitoring and evaluation of students’ adherence to pre-class materials and engagement in class | |
|                                             | Obtain student feedback on what worked well and what didn’t work well | |
|                                             | Discuss with colleagues that also use the flipped approach and attend relevant seminars and trainings | |
|                                             | Regular adjustment and modification of lesson plans to suit students’ needs | |
interaction (e.g. class discussion time), thereby increasing the opportunities to obtain support from instructors and to fulfil students’ need for relatedness. Building a good student–instructor relationship could ignite students’ interest in learning. In-depth discussion between students and instructors could cultivate skills in high-order thinking, which is usually the goal in tertiary education.

Interestingly, the needs for student–instructor interaction in the learning process were stressed by some students in the current study. For example, the presence of the instructor in pre-class videos was perceived as an important part of humanity education by our students. This is possibly different from the findings in the disciplines of science, technology, engineering, and mathematics, where instructor-created videos were considered not time-efficient and marginal in quality (Herreid & Schiller, 2013). One explanation for such difference is that students in the field of education, including those who wish to become a teacher, may value not only the knowledge being taught but also the teaching styles and the methods of presentation adopted by the instructors. Thus, for humanity subjects taught to Chinese students, the flipped approach may be more beneficial if the instructors do not only focus on the application of technological pedagogy, but also the tailoring of teaching plans (e.g. via pre-class materials, in-class activities and discussions) and time allocation during class to enhance student–instructor interactions.

4.2. Which elements of the flipped classroom approach did students or instructors recognize as challenging and require modification, and why were these elements challenging and what are some practical solutions?

One of the challenges identified by instructors was the contrasting views and feelings between junior and senior students. While junior students may be more open-minded towards different teaching modes (i.e. flipped approach), senior students were more goal-oriented (i.e. getting higher grades) when taking a course. A possible strategy to address this challenge is to provide well defined and structured course objectives at the beginning of the course, and incentives for elements related to the flipped approach (e.g. marks awarded for completing pre-class materials and activities). Also, it is recommended that instructors should closely monitor and evaluate students’ adherence to flipped elements so that materials and activities can be continuously modified to suit students’ needs. Overall, more research is still needed to help develop specific strategies that address flipped classes containing a range of student years.

Overall, research in pedagogy has long been seeking ways to motivate students’ self-learning, regardless of whether it was via pre-class preparation or after-class homework, in which real learning occurs and students could achieve more than passive learning in class. Motivating student engagement in class is a challenge, especially in Asian students who are generally passive to express personal ideas in class due to cultural values, including “saving face”, maintain harmony and show respect to authority (Wang, 2015). However, our students and instructors both perceived that student engagement, and even motivation in learning, was enhanced via the flipped approach compared to the traditional approach. These findings were consistent with previous literatures mainly from Western countries, which reviewed that the flipped classroom approach could fulfil students’ needs of competence, autonomy and relatedness, thereby raising their motivation to learn (Abeysekera & Dawson, 2015).

5. Strengths and weaknesses of the study

The strengths of this study include (1) the application of the SDT framework throughout, (2) the findings are discipline-specific and (3) both students and teachers’ perspective were examined. Taken together, we were able to propose a set of practical implementation strategies for practitioners. The application of a prominent and well-articulated framework (i.e. the SDT framework) is important in a qualitative study, as without a framework, it may be more difficult to elicit important opinions and translate them into practical and feasible implementation strategies.

To help individual university teachers become confident in delivering the flipped approach, and university decision makers to support them, discipline-specific and in-depth studies are needed. It is
also important to evaluate both students’ and teachers’ perspectives to better understand the effective aspects and obstacles of the flipped approach. However, a weakness of our study was that it was conducted in a University based in Hong Kong, where most students’ majors are in Education and are Chinese. Therefore, the findings of this study should not be generalized to other student populations and classroom settings, or should, at the very least, be interpreted with caution.

6. Conclusion
In summary, this paper provided an in-depth and qualitative analysis of potential benefits and challenges when a flipped approach is implemented in Hong Kong tertiary education. The literature in this area lacked theory-driven studies to examine the mechanisms and key features of the flipped classroom that could enhance students’ learning experiences and outcomes (Abeyesekera & Dawson, 2015). Our study extends the extant literature by applying a psychology theory to investigate the antecedents and outcomes of the intervention from a motivation perspective. Using this relatively novel approach, we identified key components that may determine the effectiveness of the flipped classroom. Further, we were able to generate specific recommendations for before, during and after class implementation of the flipped approach. More so, we considered views from both students and instructors to ensure these recommended strategies are impactful, as much as they are practical. Despite our study was relatively context- and population-specific, our recommendations are universal and could be adopted to teaching practices in other fields. We feel these initial efforts may serve as a platform to allow further explorations on this subject matter in the future.

Funding
This work was supported by the The Chinese University of Hong Kong [Micro-Module Courseware Development Grant].

Author details
Amy S Ha1
E-mail: souching01@cuhk.edu.hk
ORCID ID: http://orcid.org/0000-0002-9943-9122
John O'Reilly1
E-mail: johnoreilly@cuhk.edu.hk
Johan Y Y Ng1
E-mail: yung@cuhk.edu.hk
ORCID ID: http://orcid.org/0000-0003-0783-879X
Joni H Zhang2
E-mail: jozhangh@hku.hk
1 Department of Sports Science and Physical Education, The Chinese University of Hong Kong, Hong Kong, Hong Kong.
2 School of Public Health, The University of Hong Kong, Hong Kong, Hong Kong.

Citation information
Cite this article as: Evaluating the flipped classroom approach in Asian higher education: Perspectives from students and teachers, Amy S Ha, John O'Reilly, Johan Y Y Ng & Joni H Zhang, Cogent Education (2019), 6: 1638147.

References
Abeyesekera, L., & Dawson, P. (2015). Motivation and cognitive load in the flipped classroom: Definition, rationale and a call for research. Higher Education Research & Development, 34(1), 1–14. doi:10.1080/07294360.2014.934336
Bishop, J. L., & Verleger, M. A. (2013). The flipped classroom: A survey of the research. Paper presented at the ASEE national conference proceedings, Atlanta, GA.
Chua, J. S. M., & Lateef, F. A. (2014). The flipped classroom: Viewpoints in Asian universities. Education in Medicine Journal, 6(4). doi:10.5959/eimj.v6i4.316
Critz, C. M., & Knight, D. (2013). Using the flipped classroom in graduate nursing education. Nurse Educator, 38(5), 210–213. doi:10.1097/NNE.0b013e3182e0e56c
Deci, E. L., & Ryan, R. M. (2002). Handbook of self-determination research. Rochester, NY: University Rochester Press.
Findlay-Thompson, S., & Mombreurquette, P. (2014). Evaluation of a flipped classroom in an undergraduate business course. Business Education & Accreditation, 6(1), 63–71.
Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. Nurse Education Today, 24(2), 105–112. doi:10.1016/j.nedt.2003.10.001
Guay, F., Ratelle, C. F., & Chanal, J. (2008). Optimal learning in optimal contexts: The role of self-determination in education. Canadian Psychology, 49(3), 233. doi:10.1037/a0012758
Herreid, C. F., & Schiller, N. A. (2013). Case studies and the flipped classroom. Journal of College Science Teaching, 42(5), 62–66.
Hill, F., Tomkinson, B., Hiley, A., & Dobson, H. (2016). Learning style preferences: An examination of differences amongst students with different disciplinary backgrounds. Innovations in Education and Teaching International, 53(2), 122–134. doi:10.1080/0020739X.2014.990529
Kember, D. (2009). Promoting student-centred forms of learning across an entire university. Higher Education, 58(1), 1–13. doi:10.1007/s10734-008-9177-6
McLaughlin, J. E., Roth, M. T., Glatt, D. M., Gharhkolonarehe, N., Davidson, C. A., Griffin, L. M., … Mumper, R. J. (2014). The flipped classroom: A course redesign to foster learning and engagement in a health professions school. Academic Medicine, 89(2), 236–243. doi:10.1097/ACM.0000000000000086
Mertens, D. M. (2014). Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods. Thousand Oaks, CA: Sage publications.
O’Flaherty, J., & Phillips, C. (2015). The use of flipped classrooms in higher education: A scoping review. The Internet and Higher Education, 25, 85–95. doi:10.1016/j.iheduc.2015.02.002

Peacock, M. (2001). Match or mismatch? Learning styles and teaching styles in EFL. International Journal of Applied Linguistics, 11(1), 1–20. doi:10.1111/ijal.2001.11.issue-1

Powell, R. A., & Single, H. M. (1996). Focus groups. International Journal for Quality in Health Care, 8(5), 499–504. doi:10.1093/intqhc/8.5.499

Roach, T. (2016). Student perceptions toward flipped learning: New methods to increase interaction and active learning in economics. International Review of Economics Education, 17, 74–84. doi:10.1016/j.iree.2014.08.003

Roehl, A., Reddy, S. L., & Shannon, G. J. (2013). The flipped classroom: An opportunity to engage millennial students through active learning strategies. Journal of Family & Consumer Sciences, 105(2), 44–49. doi:10.14307/JFCS105.2.12

Schultz, D., Duffield, S., Rossmussen, S. C., & Wageman, J. (2016). Effects of the flipped classroom model on student performance for advanced placement high school chemistry students. Journal of Chemical Education, 91(9), 1334–1339. doi:10.1021/ed400868x

Sharma, N., Lau, C., Morris, G., Doherty, I., & Harbutt, D. (2014). Evaluation of the Flipped Classroom at the Li Ka Shing Faculty of Medicine: 41. Medical Education, 48, 14.

Squires, A. (2009). Methodological challenges in cross-language qualitative research: A research review. International Journal of Nursing Studies, 46(2), 277–287. doi:10.1016/j.ijnurstu.2008.08.006

Sun, J. C. Y., Wu, Y. T., & Lee, W. I. (2017). The effect of the flipped classroom approach to OpenCourseWare instruction on students’ self-regulation. British Journal of Educational Technology, 48(3), 713–729. doi:10.1111/bjet.12444

Tune, J. D., Sturek, M., & Basile, D. P. (2013). Flipped classroom model improves graduate student performance in cardiovascular, respiratory, and renal physiology. Advances in Physiology Education, 37(4), 316–320. doi:10.1152/advan.00091.2013

Wang, W. (2015). Teaching English as an international language in China: Investigating university teachers’ and students’ attitudes towards China English. System, 53, 60–72. doi:10.1016/j.system.2015.06.008

Wright, G. B. (2011). Student-centered learning in higher education. International Journal of Teaching and Learning in Higher Education, 23(1), 92–97.