The following publication Lo, C. K. M., Kwan, C., & Cho, Y. W. (2024). Impact of Online Flipped Classroom on Student Learning Experience: A Mixed-Methods Study. Journal of Social Work Education, 1–15. https://doi.org/10.1080/10437797.2024.2338231

Abstract

Flipped classroom is a commonly used pedagogical approach in higher education across various disciplines, which incorporates interactive and dynamic group learning activities in the classroom and asynchronous independent study outside of class. Previous studies have reported benefits of flipped classroom in student learning and performance; however, little is known about the efficacy of fully online flipped classroom. Using mixed quantitative and qualitative methods, the current study aimed to examine the efficacy of online flipped classroom, compared with the conventional online teaching method. The study involved 250 Chinese undergraduate social work students, with 126 students who experienced the conventional online teaching method, and 124 students who learned with the online flipped classroom approach. The quantitative analyses show that students who experienced online flipped classroom had a lower performance in lecture participation and overall course grade; and had less positive perceptions of various aspects of the course. The qualitative analyses of the students' feedback and interviews reveal both advantages and challenges of the online flipped model. There is insufficient evidence to conclude the effectiveness of online flipped classroom in social work education and further investigation on cultural and contextual factors contributing to an effective online flipped approach is warranted.

Keywords: Teaching/learning strategies, flipped classroom, mixed methods, social work education

Impact of Online Flipped Classroom on Student Learning Experience: A mixed methods study

There has been a proliferation in the use of interactive pedagogies in higher education over the past two decades. Moving from the traditional forms of classroom environment and pre-technology education, the evolution of interactive pedagogies has established new learning environments. The incorporation of digital technology and virtual communication allows teachers and students to access course materials outside the classroom and actively exchange ideas through online platforms (Siemens & Baker, 2012). Interactive pedagogies are considered to be viable and effective in engaging and motivating students in class (Johnson et al., 2000), enabling independent learning (Tashkenbayevna et al., 2020), and deepening students' understanding of course knowledge (Kagawa et al., 2006).

In the light of increasing availability and accessibility of technology, flipped classroom, one of the most widely implemented methods among different interactive pedagogies in higher education, has gained rising attention from educators. Flipped classroom, also referred to as inverted classroom (Gardner, 2012; Lage et al., 2000), is defined as a pedagogical model that focuses on interactive and group learning activities inside the classroom and transforms students' individual learning outside the classroom (Bergmann & Sams, 2012; McDonald & Smith, 2013). Employing a hybrid learning approach, teacher-centered instruction and lectures are restructured by encouraging students to review class materials asynchronously and independently before a live class session to maximize time in the classroom for more student-centered activities and active participation (Chen et al., 2018; Låg & Sæle, 2019). In the flipped classroom, students are expected to take the initiative and responsibility for their individual learning process and enjoy a higher autonomy in governing their learning pace and interests. Instead of merely delivering information and knowledge through traditional top-down strategies (e.g., content presentation), teachers take as a facilitator role and incorporate a variety

of collaborative and thought-provoking activities such as discussion, problem-solving, applied learning, and reflections into the class to promote active learning and meaningful engagement with peers (Akçayır & Akçayır, 2018).

Owing to its popularity and innovative instructional ideology, there is burgeoning research on the effectiveness of flipped classroom in improving educational outcomes (Lo & Hew, 2017). Previous research on flipped classroom techniques in college settings generally supports its positive impact on learning process and outcomes, including higher class participation and satisfaction (e.g., Chen et al., 2014; McLaughlin et al., 2014), improved learning performance and grades (e.g., Mason et al., 2013; Tune et al., 2013), enhanced intrinsic learning motivation (e.g., Enfield, 2013; Wilson, 2013), and more interactions among students and between tutors and students (e.g., Galway et al., 2014; Ryan & Reid, 2016). In view of the benefits, the pedagogical approach has been implemented in an array of disciplines and fields, ranging from education (e.g., Turan & Akdag-Cimen, 2020), health and medical (e.g., Li et al., 2020), to mathematics and statistics (e.g., Fernández-Martín et al., 2020) among others, around the globe. However, there has been relatively limited effort in investigating the application of flipped classroom in social work education. Given its suitability for teaching social work competencies as reflected by the feature of interactive and peer-to-peer active learning (Robinson et al., 2013), the use of flipped classroom has been identified as expanding in social work research (Matich-Maroney & Moore, 2016) and clinical practice skills (e.g., Counselman-Carpenter, 2019) in bachelor- and master-level courses. Specifically, a recent study showed that social work students using active learning methods via flipped classroom obtained significantly better academic results when compared to the traditional learning model (Oliván Blázquez et al., 2019). In terms of class participation and engagement, students not only demonstrated more class preparation and discussion but also a higher degree of involvement in peer-based learning and self-reflection in an undergraduate social work practice

course (Sage & Sele, 2015). Nevertheless, the impact of flipped classroom on student satisfaction in the course and the pedagogical method used, and long-term learning remains inconclusive (Gómez-Poyato et al., 2020; Oliván Blázquez et al., 2019).

In the context of the COVID-19 pandemic, a challenge to the implementation of flipped classroom was to switch the approach from face-to-face to a fully online mode, in order to continue with teaching and learning activities during campus closure periods. Among the very few research studies to evaluate the efficacy of fully online flipped classroom (e.g., Hew et al., 2020; Jia et al., 2021; Stohr et al., 2020), it was found that student performance did not differ between the fully online and campus-based, face-to-face flipped formats. Meanwhile, Stohr et al. (2020) also revealed that online flipped classroom led to a polarization in performance, with a large spread of average attendance in various learning activities. Clearly, additional work examining the efficacy of fully online flipped classroom compared to other approaches, such as online teaching without flipped classroom, will add to the current literature.

Despite growing empirical support suggesting the practice of conventional flipped classroom can be effective in improving student learning outcomes, research focusing on fully online flipped classroom and social work education is scarce, and most of the related studies investigate the use of a flipped classroom approach in knowledge-based or clinical skills social work courses. It remains unclear whether flipped classroom is beneficial to student learning in knowledge-skill integration courses. Further, discussion on the impacts of different cultural backgrounds on flipped classroom are rare, which is surprising as the discipline of social work emphasizes diversity and contextual factors. Cultural factors can influence an educational system and the users' (e.g., students and teachers) engagement of such systems (Hu et al., 2018). For instance, the differing classroom participation patterns of East Asian international students in American and Canadian universities have been identified and examined in research studies (e.g., Kim, 2008; Zhou et al., 2021). Active classroom participation through verbal contribution

is considered as a key measure of student academic performance and students generally value individualism and independent learning in the Western education system (Takahashi, 2019). In contrast, East Asian students, under the influence of Confucianism, prefer passive participation through attentive listening and tend to extensively rely on the teacher as the leading source of information (Chua & Lateef, 2014). It appears that the set-up and expectations of the flipped classroom model are more align with the Western learning philosophy and practice. Cultural differences in learning styles and the perceived role of teacher may impact the implementation, receptivity, and effectiveness of flipped classroom.

To the best of our knowledge, the current study is the first to compare the effectiveness in enhancing social work students' learning experience between the online flipped classroom and traditional online teaching model in an undergraduate social work capstone project course. Additionally, the study is conducted at a social work program in Hong Kong, whereby English is the medium of teaching and learning, but the students are Chinese and English is their second language. As such, the findings may offer insights locally and abroad to social work programs with international students who come from culturally and linguistically different backgrounds. Using both qualitative and quantitative methods, the following research two questions were addressed: (1) Which teaching model, fully online flipped classroom or conventional online teaching, is more effective in improving social work undergraduates' class participation, learning performance, and satisfaction with the course and instructors?; (2) What are the advantages and challenges of the fully online flipped classroom?

Method

Participants

This study involved 250 Chinese social work undergraduate students enrolled in a capstone project course at a university in Hong Kong in the academic years of 2019-2020 and 2020-2021. The capstone project was a compulsory course and students were automatically

enrolled in the course in the second semester of their final year in the Bachelor of Arts in Social Work (BASW) program. Therefore, all participants were final year students who had completed most of the required courses for graduation. The 2019-2020 cohort was made up of 126 students (51 full-time; 75 part-time) who experienced the conventional online teaching method (the conventional online group), while the cohort of 2020-2021 comprised 124 students (50 full-time; 74 part-time) who learned with the online flipped classroom approach (the fully online flipped group). The percentage of female students was 65% and 66% for the conventional online group and the fully online flipped group, respectively. The mean age was 27.2 years (SD = 5.4) for the conventional online group and 27.5 years (SD = 5.7) for the fully online flipped group. There was no gender and age difference between the two groups.

Capstone Project Course

The capstone project course was aimed at social work students to synthesize theory, practice skills, personal and professional values, and learning experiences into a final social work portfolio consisting of predetermined themes such as theory and practice integration, personal and professional integration, and future direction. The major purpose of the course was for students to integrate the knowledge and skills learned throughout the four-year undergraduate study. Student portfolios have been used in social work education in different countries (Alvarez & Moxley, 2004; Coleman et al., 2002; Venville et al., 2017). To develop a portfolio, students were required to retrieve relevant artifacts (e.g., an essay, lecture notes, an article) related to the themes and to reflect on their learning. The course lectures introduced key concepts of a social work professional portfolio, social work integration, reflection, and instruction in how to prepare a social work portfolio. The small-group tutorials were to facilitate students to integrate their learning and to allow them to receive more personalized feedback from the instructor and their peers. The entire course was conducted completely online for both cohorts.

Fully online flipped classroom group

Among the 39 teaching hours (3 hours per week for 13 weeks), there were 18 lecture hours and 21 tutorial hours. In the fully online flipped classroom group, one hour of each lecture was flipped from the traditional lecture type teaching into a series of short videos for students to preview prior to class, and outside-of-class activities such as taking bullet-point notes that prepared them for in-class participation. Compared to the in-person flipped format, the remaining two hours of live contact time were conducted online and allocated to a variety of instructor-facilitated in-class activities including short quizzes, group discussion, reflection, and a peer-review exercise. In the conventional online group, the usual teaching method was used in which all lecture hours were delivered by the instructor online.

Study Design and Procedures

A mixed qualitative and quantitative method with the control group was employed in the study to examine the impact of the use of the fully online flipped classroom teaching model. The quantitative measures used to compare the impact of the online flipped classroom approach on the students' learning experience and achievement of learning outcomes primarily included the quality of portfolios, as well as participation and attendance in lectures and tutorials. In addition, students' perceptions of the impact of the course on their learning were evaluated with the online Student Feedback Questionnaire (SFQ), an anonymous questionnaire administered by the university in the last two weeks of the semester. During the two-week period, up to six system-generated reminders were sent to non-respondents via email. Participation in the SFQ was completely voluntary. The response rates of the SFQ were 39.68% and 41.94% for the conventional online group and fully online flipped group, respectively. The quantitative data were retrieved from both cohorts.

Qualitative data collection methods included semi-structured interviews with students (n=6) and open-ended comments from the SFQ (n=24). To ensure anonymity, a research

assistant was responsible for the recruitment tasks (including sending out the email invitation and any communication exchange with potential participants) and conducting all interviews. The interviews were conducted online or in-person (the option was given to the participant) and audio-recorded. Afterwards, the research assistant transcribed the audio-recording, removed any identifying information, and deleted it. Each participant received a HKD100 (about USD12.8) supermarket voucher upon completion of the interview. All interviews were conducted between May and June 2021.

Measurement

The present study used multiple assessments and both qualitative and quantitative methods to triangulate the data so as to provides a comprehensive understanding of the impacts of the online flipped classroom pedagogy. Such data triangulation has also been used in previous studies on flipped classrooms (e.g., Behmanesh et al., 2020; Ng, 2018). For the quantitative assessments, summative learning outcomes of students and student feedback on the course were collected. Regarding the qualitative data, individual student interviews were conducted to collect in-depth information about students' experience in the course.

Quantitative Measures (Conventional Online and Fully Online Flipped Groups)

Overall performance. Students' overall performance in the course was indicated by their overall course grade, computed from the lecture and tutorial participation scores (30%) and the portfolio scores (70%). The letter grade was converted to a grade point on a 4.3 scale.

Grades of Portfolio. Students' portfolios were graded by the instructors. The letter grade was then converted to a grade point on a 4.3 scale.

Participation Scores in Lectures and Tutorials. Students' levels of engagement and participation were rated by the instructors of the course. The letter grades were converted to a grade point on a 4.3 scale.

Lecture Attendance. Students' attendance in lectures was computed by dividing the number of lectures students attended by the total number of lectures.

Student Feedback Questionnaire (SFQ). Students' satisfaction with the course and the instructor was evaluated by the SFQ regarding i) learning experience of the subject (4 items) and ii) teaching of the instructor (7 items). All items were each rated on a 5-point scale, ranging from 1 = strongly disagree to 5 = strongly agree. Cronbach's alphas for the two subscales were .926 and .964, respectively, indicating excellent internal consistency.

Qualitative Measures (Fully Online Flipped Group Only)

Semi-Structured Interviews. The questions on the semi-structured interview guide were focused on evaluating the entire course and included questions related to the flipped classroom approach.

Student Feedback Questionnaire (SFQ). Students' qualitative feedback to the open-ended questions in the SFQ were retrieved. The questions included i) What aspects of the subject were most useful to your learning? and ii) How could the subject be improved to help you learn better?

Ethics Approval

The research project and protocol of the study was approved by the Human Subjects Ethics Sub-committee of the authors' affiliated institution (reference number HSEARS20200618002). A written consent form was signed by all students who participated in the individual interviews. Ethics approval was also obtained from the university for using the students' learning data for the present study.

Data Analysis

For the quantitative data analysis, an independent t-test and chi-square test were used to evaluate the mean differences and score distribution between the conventional online and fully online flipped groups in i) grades of the portfolio, ii) participation and attendance scores,

iii) overall grades, and iv) SFQ scores. Statistical Package for the Social Sciences (SPSS) was used to perform the analysis. P-values < .05 were regarded as statistically significant. The alpha values were in the range of 0.7–0.8 which is generally considered as acceptable for reliability

The qualitative data was analyzed using thematic analysis (Braun & Clark, 2006). To attune to the extensive literature (studies and systematic reviews) on the flipped classroom method and to remain open for emergent themes, a hybrid approach to coding, involving deductive and inductive codes was used. The transcripts and open-ended comments from the SFQ were analyzed using NVivo.

Results

Student Performance in the Course

Student performance in the course is shown in Table 1. Students from the comparison group performed better in the course in terms of their overall grade, $t(248) = 3.887$, $p < .001$ and level of participation in lectures, $t(248) = .587$, $p < .001$. The two groups did not differ in their participation in tutorial sessions and lecture attendance.

Student Satisfaction with the Course

The comparison of the students' feedback on the course and instructors between the two groups is presented in Table 2. The questionnaire was completed by 50 and 52 students from the conventional online group and fully online flipped group, respectively. As the independent t-test shows, students from the comparison group reported more positive perceptions of the course, $t(98) = 2.658$, $p = .009$. Specifically, the students from the comparison group tended to report having a clearer understanding of the expectations of the course, $t(100) = 2.577$, $p = .011$; that the learning activities had helped them achieve the learning outcomes, $t(100) = 2.157$, $p = .033$; that the assessments had required them to demonstrate their knowledge, skills, and understanding of the course, $t(99) = 2.859$, $p = .005$; and a clearer understanding of the grading criteria of the course, $t(99) = 2.187$, $p = .031$.

Furthermore, students from the comparison group gave more positive rates towards the course instructors, $t(97) = 2.628$, $p = .010$. In particular, the results reveal that students from the comparison group rated more positively in regard to having received help from the teacher when needed, $t(100) = 2.723$, $p = .008$; that they were motivated by the teacher, $t(100) = 2.539$, $p = .012$; that they had a valuable learning experience, $t(100) = 2.758$, $p = .007$; and that they perceived the instructor to be an effective teacher, $t(99) = 2.494$, $p = .014$.

Qualitative Results

The qualitative analyses of the semi-structured interviews and SFQ open-ended questions show five themes capturing the students' overall experience with the flipped classroom approach: i) engagement, ii) fully online mode, iii) flexible and timesaving, iv) preference for traditional modes, and v) quality of video lectures.

Theme 1: Engagement

The theme of engagement was captured across all six interviews and the SFQ open-ended comments. Overall, most of the students indicated that the online flipped classroom approach supported better engagement during in-class activities. For instance, one student stated,

> We spent one hour attending online learning and revising the materials. Then, we came back for two hours to discuss what we had learnt. I think this was less boring and less one-way teaching. For me it was easier to be attentive during the lesson. I felt more comfortable. I think a three hour lecture is too long and very hard to stay attentive throughout the whole lesson. (P1)

Another student echoed this sentiment,

> Indeed, this two to one separation was good actually. For the lecturer, she didn't have to speak for three hours. Students could also focus better as the time is shorter. (P3)

Students also shared how being familiar with the teaching and learning content prior to coming to class better prepared them for engagement during class. For instance, as one student expressed it,

> Besides, I felt more at ease with the flipped classroom teaching approach. . . . It was easier to participate in the activities as we were discussing the material provided in the one hour lecture video that we had already completed. Therefore, we became more familiar with the topic. (P1)

Another student indicated that access to the teaching and learning materials in advance was helpful,

> As this subject was about understanding and reflecting on oneself, it took more time for us to digest, therefore it was a good arrangement that we could spend a few days before the lectures to understand the topics and ourselves. (P2)

Furthermore, students felt that reviewing the materials beforehand led to more and better discussions during class. As one student put it,

> The whole capstone subject is very innovative for me, because in the past I didn't have a similar learning experience. It is rare to have less time studying but more time for discussion. There were some notes which we needed to submit after reviewing the video. A smart thing about this subject was that when we were working on the notes, it encouraged or reminded us to think about questions related to the topics. This helped us have a better discussion within the two hours in-class activities. (P6)

Another student echoed this sentiment,

> It further encouraged students to interact even we could only text on Blackboard. Sometimes when we watch videos in traditional face-to-face lectures, we are unable to give feedback in such a short time. With this flipped classroom method, I think we are able to engage in more in-depth discussion in class. (P2)

Still, there were some students who felt that the discussion and interaction during the in-class activities could be better, as one student commented,

> For the two hours discussion, the discussion atmosphere is not too vigorous, compared to the tutorials…because we do not discuss too much about ourselves in the lectures. . . . Most of the time they are so quiet ... (P5)

Another student considered discussion to be difficult in the larger lecture classes as the subject was related to reflecting on more personal stories and experiences,

> As there are many personal stories involved in discussion, seminars will be more appropriate to discuss these. (P4)

Theme 2: Fully Online Mode

Discussions regarding the fully online mode of this subject were identified across all interviews and SFQ comments. Overall, the students gave mixed sentiments. For example, a student said,

> On one hand, we didn't have the chance to discuss face-to-face. On the other hand, some students who were not willing to talk would use text to communicate with us. Previously the students were more unwilling to talk in the face-to-face setting. Only a few students would ask questions. In contrast, the online learning allowed the students to discuss through typing. There were more students asking questions in text format because it was less embarrassing compared with asking questions face-to-face. (P6)

Another student felt that not all students had an appropriate physical space to fully engage in the synchronous online class,

> Some students didn't want to turn on their microphone because they had family members at home, while some were attending lessons in the street. Therefore, it was hard for them to participate in the discussion. I think this was unfortunate. Sometimes it was hard to communicate with them through text. (P1)

Another student echoed this sentiment,

> I think it was a setback for the online flipped classroom…. one thing is if the flipped classroom method can also be implemented in real-time/in-person lectures, like two hours of on-campus lectures and one hour of lecture videos, I think it will be good. In lectures, we usually typed in texts in the chat room on Blackboard…Not many students liked to turn on the microphone, but I don't think it was about this course, it was about the online learning mode, perhaps there were limitations such as being unable to speak at home or outdoors. (P2)

Theme 3: Flexible and Time Saving

This theme was captured across all interviews and SFQ comments. Most of the students indicated that the out-of-class activities and reduction of in-class time enabled flexible learning and was time saving. As one student put it,

> The flipped classroom allowed us to have one hour of self-learning, which was flexible. (P1)

Another student said,

> I think the pro of online lectures was the time, it was an hour less than traditional lectures, and we had to prepare ourselves by watching a one-hour video. I usually spent less than an hour completing the videos and the exercises. It was timesaving. (P2)

Another student indicated,

> As a whole I think this is suitable for part-time students. Sometimes we can't attend the lesson on time. This subject allows us to attend the lesson depending on our own schedule. (P6)

In contrast, a few students considered that participating in the out-of-class activities was more dependent on the self-discipline of the students,

I think it was a good try, but I didn't get used to it to be honest. The new lecture method was time saving... But overall, it was okay because I would study by myself off-lessons, for those who don't, they felt this subject was a bit vague. (P4)

Another student echoed this,

Although there were video recordings, the fact was you missed the lesson and you couldn't participate.…So maybe there can be better time management. Overall, it is good but not flawless. (P3)

Theme 4: Quality of Lecture Videos

This theme was captured in four interviews and the SFQ comments. There were mixed feelings regarding the quality of the video lectures in the out-of-class activities. For example, some of the students in the SFQ reported that the videos were the aspect of the subject most useful to their learning: "The videos of flipped classroom were useful", "the video", and "the video is useful". In contrast, some students questioned the quality of the videos. As one student mentioned it was too text-heavy,

The content of the lecture videos was rich, but I was not used to this learning method. You know, we just read texts from the videos, it was a bit vague. You know the videos only contain texts. It would be more appealing to me if I can see the lecturers' faces and listen their voices in the videos. It was hard for me to focus only for five minutes to read the texts in the videos. . . . (P4)

However, another student shared how the textual information on the video was helpful to an ESL student but the speed of the video was too quick. This participant indicated,

We feel that all the teaching staff contributed a lot in making the videos. My classmates and I really watched all the videos but it was a bit too quick for me because my English is not very good. I had to pause the video multiple times or even screenshot it. Therefore, we asked the lecturer for a text version of the videos, which would benefit students who

are not good at English. As a result, although the lecture video was about an hour, I spent more than an hour studying the lecture and completing the tasks. (P3)

This student also highlighted how different edits of the video could be an option to address the diverse needs of the learners,

> But I also heard some students who are good at English saying that the videos are boring, and the speed is too slow. Perhaps there could be different edits of lecture videos or a text version and a video version so that students can study it further if they don't fully understand the content of the videos. (P3)

Theme 5: Preference for Traditional Modes

This theme was captured in two of the interviews and the SFQ comments. Students preferred traditional teaching methods during lecture times. For example, one student indicated,

> Compared to the other learning modes with PowerPoint presentations, I prefer the learning modes in the past. From my point of view, it is recommended to use the traditional part for teaching; video viewing [referring to the out-of-class video lectures] is used for finding out answers which will be more different or difficult because I forget the contents. (P5)

Another student echoed this,

> Yes, we were required to watch the one-hour video before the class, and I felt that we had already completed the whole lecture before the class, so why is there a two-hour lecture class, you know what I mean? It was like I had already learnt what I have to learn in the video, so I can just absorb everything in the video, there is nothing to discuss. Perhaps I got used to the traditional lecturing style. I would prefer the lecture to maybe consist of some teaching, for example the recap of lecture videos or more interactions involved in the class. (P4)

Discussion

Using a mixed-method approach, the present study is among the first to examine the impact of online flipped classroom on undergraduate students' learning experience and performance. Contrary to previous studies showing that fully online flipped classrooms were as effective as a face-to-face format (Hew et al., 2020; Jia et al., 2021; Stohr et al., 2020), the quantitative findings of the present study showed that students who experienced the online flipped classroom pedagogical approach had lower performance and participation in the course. The students who experienced the online flipped classroom method also reported a less positive perception of various aspects of the course and of the instructors. The results suggest that the conventional online teaching approach might be more effective in promoting students' learning outcomes in terms of engagement and grades, in which the students had a less positive experience with the fully online flipped model when taking knowledge-skill integration course. One possible explanation for the finding is that the capstone course itself was a new experience for the students, requiring them to integrate and reflect on their learning throughout the four-year study and develop a social work portfolio. It may be that some students found it challenging and wanted more direct guidance from the instructors through a lecture format. Another potential reason is that the students from the present study were in their final year of undergraduate study and were accustomed to teacher-directed learning rather than a self-directed learning method. As consistently found in previous literature, one of the most salient concerns of the flipped approach is related to out-of-class activities such as inadequate student preparation prior to class and students' need for guidance at home (Akçayır & Akçayır, 2018). Some students find the flipped classroom method requires an increased workload, and that watching video lectures outside the classroom and completing out-of-class assignments can be time-consuming (Wanner & Palmer, 2015). Similarly, concerns about time management and increased workload were mentioned by the students in the qualitative interviews of the present study. It is likely that the out-of-class activities were particularly challenging for the part-time

students whose schedules were already occupied by their social work practicum and own jobs, hence hindering their learning experience with the online flipped classroom.

Various scholars have also argued that teacher-directed learning has been central to the pedagogy of educational systems in the East Asian region, in which traditional lecture-based instruction have a strong foothold (Biggs & Tang, 2007; Hallinger & Lu, 2013; Watkins, 2000). Familiarity with such traditional teaching methods may have implicated students' preference and views of flipped classroom. Inviting students to critically reflect on their learning experiences throughout the educational system (e.g., teacher-directed vs student-directed) prior to implementation of flipped classroom may encourage receptiveness towards the method.

Although the quantitative findings did not support the idea that the online flipped classroom approach was better than the online teaching method in terms of the measured outcomes, the individual interviews and qualitative feedback from the students revealed both positive impacts and challenges of the approach. In particular, the present study found that online flipped classroom enhanced students' engagement in the class and allowed flexibility in their learning. Previewing materials and coming up with questions related to the topics better prepared students for engagement during class. This finding is in alignment with a systematic review showing that improved time efficiency and learner outcomes such as engagement and feeling more confident were some of the advantages of flipped classroom (Akçayır & Akçayır, 2018).

Successful flipped classroom teaching depends on various factors, one of which is the quality of the flipped materials. Consistent with a previous study showing that student learning via the flipped classroom model was impeded by the quality of the pre-class videos (Moraros et al., 2015), the students in the study commented that the limited quality of the videos resulted in spending extra time understanding the content. Previewing of the pre-class materials is crucial, as previous research has found that the benefits of the flipped approach hinge on the

ability of students to come to class well prepared in having learned the content and thus ready for the in-class activities (Jensen et al., 2018).

Furthermore, the study showed mixed views toward the fully online learning mode. Although online learning has become the major teaching model during the COVID-19 pandemic, not all students are attuned to this new learning approach. In fact, a large-scale survey with undergraduate students in China showed that only 25.5% of the students firmly believed that online classes were helpful for their learning (Tang et al., 2020). It was also a challenge for the instructors to facilitate group discussions in the fully online flipped classroom mode, which in turn may have affected the students' overall learning experience.

Limitations

The findings of the study should be interpreted in view of its limitations. Firstly, as the study used a non-randomized controlled design, it is possible that the quantitative differences in the students' performance and perceptions of the course were due to the differences in the students' characteristics between groups, not the learning modality itself. Although the two groups did not differ in terms of basic background characteristics, including age and gender, it could still be possible that the two groups were different in other aspects, which in turn influenced the results. To minimize sources of bias in group assignments and improve quality of evidence, we encourage future evaluation studies to use random assignment and conceal group assignments from the students and instructors. Secondly, only around 40% of the students completed the student feedback questionnaire and only 4.8% of the students responded to the email invitation and participated in the interview, resulting in research findings subject to selection bias. One of the reasons for such low response rates was that the students were in their final semester with their concurrent social work practicum, hence participating in the interview and completing the questionnaire were of low priority. Another possible reason was related to the mode of administration. A previous study showed a decline in students' response

rate of end-of-class evaluation survey from 73% to 43%, due to the change from using paper-based to online questionnaires (Chapman & Joines, 2017). Apart from the response rate, the actual number of respondents is also important. Fosnacht et al. (2017) suggested responses from 50 to 75 students provide reliable estimates for end-of-class evaluation surveys. Future studies may consider both the response rate and the number of responses from students. Strategies to enhance students' participation in class evaluations, such as the use of paper-based questionnaire are needed. Another limitation of the study was that the quantitative outcome measures were assessed at post-test only, and it is uncertain if the two groups were different before the commencement of the course and whether there was within-group change before and after the semester. Furthermore, the study was conducted during the COVID-19 pandemic, effects of the pandemic on students' learning are possible. Adjusting to the new online learning mode and different challenges in life during the early phase of the pandemic could be particularly stressful for the students from the 2019-2020 cohort (the conventional online group). Another way to evaluate students' level of stress is by the stringency level of the government's policy responses to the pandemic. According to the Oxford COVID-19 Government Response Tracker, the stringency index in Hong Kong at the time the 2019-2020 cohort participated in the course was 13.89, compared to 71.3 for the 2020-2021 cohort (Thomas et al., 2020). It may be the case that the 2020-2021 students (the fully online flipped group) experienced higher levels of stress, as they had to cope with the ongoing pandemic as well as the tightened prevention and control measures, which subsequently affected their learning and engagement in class. Despite these limitations, the quantitative and qualitative findings of the study contribute to the paucity of research on flipped classroom teaching with a fully online mode.

Implications for Future Research and Teaching

Although the quantitative data of the present study showed that the fully online flipped classroom method did not improve students' learning experience and performance, as compared to the fully online conventional teaching approach, the study's evidence is insufficient to conclude that fully online flipped classroom is not useful. Instead, additional research work investigating factors that may contribute to successful online flipped classroom is needed. For instance, Cho et al. (2021) found teaching and learning factors, such as perceiving the preview materials as meaningful and helpful, believing that the instructors facilitated their learning, and actively participating in learning activities contributed to student learning outcomes in the conventional flipped model. Future studies examining whether similar factors contribute to an effective online flipped approach will shed light on the topic. Also, research into whether online flipped classroom may be more suitable for particular groups of students is warranted. Previous evidence suggests differences in learning styles and attitudes of Asian and Western students in the classroom and how they view the teacher's role (e.g., Chua & Lateef, 2014), in which these cultural perceptions may affect the feasibility and receptivity of flipped classroom. As higher education is increasingly globalized, so is the trend towards student-directed learning. Albeit, more research is needed to examine whether student-directed learning (e.g., flipped classroom) is always and universally advantageous across cultures and contexts. In light of the heavy emphasis on individualism and independent learning in the Western education, it is possible that the online flipped classroom model would yield better learning outcomes for students from the Western cultures. The study may be replicated in Western countries for further verification. Furthermore, students' academic performance should not be considered as the only outcome measure of flipped classroom. Selection of appropriate outcome measures and inclusion of teaching and learning components that actively address those outcomes will provide useful information on potential active ingredients that contribute to a positive flipped classroom experience. With regard to practice, it is important

to note that implementation of flipped classroom, especially in a fully online mode, requires extra effort from both instructors and students, rather than merely transforming existing lecture material into flipped format. Careful planning of flipped material, assessment of students' level of readiness (e.g., attuning to differing cultural and linguistic factors) for flipped learning, designing ways to motivate students to learn in a self-directed way, and providing extra support to help students learn independently are all crucial factors to successful implementation.

References

Akçayır, G., & Akçayır, M. (2018). The flipped classroom: A review of its advantages and challenges. *Computers & Education, 126*, 334-345.

Alvarez, A. & Moxley, D. P. (2004). The student portfolio in social work education. *Journal of Teaching in Social Work, 24*(1-2), 87-103.

Behmanesh, F., Bakouei, F., Nikpour, M., & Parvaneh, M. (2020). Comparing the Effects of Traditional Teaching and Flipped Classroom Methods on Midwifery Students' Practical Learning: The Embedded Mixed Method. *Technology, Knowledge and Learning*, 1-10.

Bergmann, J., & Sams, A. (2012). Flip your classroom: Reach every student in every class every day. International Society for Technology in Education.

Biggs, J., & Tang, C. (2007). *Teaching for Quality Learning at University*. Buckingham: McGraw-Hill Education.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101.

Chapman, D. D., & Joines, J. A. (2017). Strategies for Increasing Response Rates for Online End-of-Course Evaluations. *International Journal of Teaching and Learning in Higher Education, 29*(1), 47-60.

Chen, K. S., Monrouxe, L., Lu, Y. H., Jenq, C. C., Chang, Y. J., Chang, Y. C., & Chai, P. Y. C. (2018). Academic outcomes of flipped classroom learning: a meta-analysis. *Medical Education, 52*(9), 910-924.

Chen, L., Chen, T. L., & Chen, N. S. (2015). Students' perspectives of using cooperative learning in a flipped statistics classroom. *Australasian Journal of Educational Technology, 31*(6), 621-640.

Chen, Y., Wang, Y., & Chen, N. S. (2014). Is FLIP enough? Or should we use the FLIPPED model instead? *Computers & Education, 79*, 16-27.

Cho, M. H., Park, S. W., & Lee, S. E. (2021). Student characteristics and learning and teaching factors predicting affective and motivational outcomes in flipped college classrooms. *Studies in Higher Education*, *46*(3), 509-522.

Chua, J. S. M., & Lateef, F. A. (2014). The flipped classroom: Viewpoints in Asian universities. *Education in medicine journal*, *6*(4).

Coleman, H., Rogers, G., & King, J. (2002). Using portfolios to stimulate critical thinking in social work education. *Social Work Education*, *21*(5), 583-595.

Counselman-Carpenter, E. A. (2018). Efficacy of the flipped classroom to teach play therapy: A mixed-methods study. *International Journal of Play Therapy, 27*(3), 146-156.

Counselman-Carpenter, E. A. (2019). Teaching Note—MSW Student Perceptions of Learning Advanced Clinical Practice Skills Through the Flipped Classroom. *Journal of Social Work Education*, *55*(2), 403-408.

Enfield, J. (2013). Looking at the impact of the flipped classroom model of instruction on undergraduate multimedia students at CSUN. *TechTrends, 57*(6), 14-27.

Fernández-Martín, F. D., Romero-Rodríguez, J. M., Gómez-García, G., & Ramos Navas-Parejo, M. (2020). Impact of the flipped classroom method in the mathematical area: A systematic review. *Mathematics, 8*(12), 2162.

Fosnacht, K., Sarraf, S., Howe, E., & Peck, L. K. (2017). How important are high response rates for college surveys? *The Review of Higher Education, 40*(2), 245-265.

Galway, L. P., Corbett, K. K., Takaro, T. K., Tairyan, K., & Frank, E. (2014). A novel integration of online and flipped classroom instructional models in public health higher education. *BMC Medical Education, 14*(1), 1-9.

Gardner, J. G. (2012). The Inverted Agricultural Economics Classroom: A new way to teach? A new way to learn? Agricultural and Applied Economics Association.

Gómez-Poyato, M. J., Aguilar-Latorre, A., Martínez-Pecharromán, M. M., Magallón-Botaya, R., & Oliván-Blázquez, B. (2020). Flipped classroom and role-playing as active learning methods in the social work degree: Randomized experimental study. *Social Work Education, 39*(7), 879-892.

Hallinger, P., & Lu, J. (2013). Learner centered higher education in East Asia: Assessing the effects on student engagement. *International Journal of Educational Management, 27*(6), 594-612.

Hew, K. F., Jia, C., Gonda, D. E., & Bai, S. (2020). Transitioning to the "new normal" of learning in unpredictable times: pedagogical practices and learning performance in fully online flipped classrooms. *International Journal of Educational Technology in Higher Education*, *17*(1), 1-22.

Hu, R., Gao, H., Ye, Y., Ni, Z., Jiang, N., & Jiang, X. (2018). Effectiveness of flipped classrooms in Chinese baccalaureate nursing education: A meta-analysis of randomized controlled trials. *International Journal of Nursing Studies, 79*, 94-103.

Jensen, J. L., Holt, E. A., Sowards, J. B., Ogden, T. H., & West, R. E. (2018). Investigating strategies for pre-class content learning in a flipped classroom. *Journal of Science Education and Technology, 27*, 523–535. https://doi.org/10.1007/s10956-018-9740-6

Jensen, J. L., Kummer, T. A., & Godoy, P. D. D. M. (2015). Improvements from a flipped classroom may simply be the fruits of active learning. *CBE—Life Sciences Education,* 14(1), ar5.

Jia, C., Hew, K. F., Bai, S., & Huang, W. (2020). Adaptation of a conventional flipped course to an online flipped format during the Covid-19 pandemic: Student learning

performance and engagement. *Journal of Research on Technology in Education*, 1-21. https://doi.org/10.1080/15391523.2020.1847220.

Johnson, W. L., Rickel, J. W., & Lester, J. C. (2000). Animated pedagogical agents: Face-to-face interaction in interactive learning environments. *International Journal of Artificial Intelligence in Education, 11*(1), 47-78.

Kagawa, F., Selby, D., & Trier, C. (2006). Exploring students' perceptions of interactive pedagogies in education for sustainable development. *Planet, 17*(1), 53-56.

Kim, S. (2008). Silent participation: east asian international graduate students' views on active classroom participation. *Journal of Excellence in College Teaching, 19*(2-3), 199–220.

Låg, T., & Sæle, R. G. (2019). Does the flipped classroom improve student learning and satisfaction? A systematic review and meta-analysis. *AERA Open, 5*(3), 2332858419870489.

Lage, M. J., Platt, G. J., & Treglia, M. (2000). Inverting the classroom: A gateway to creating an inclusive learning environment. *The Journal of Economic Education, 31*(1), 30-43.

Leo, J., & Puzio, K. (2016). Flipped instruction in a high school science classroom. *Journal of Science Education and Technology, 25*(5), 775-781.

Li, S., Liao, X., Burdick, W., & Tong, K. (2020). The effectiveness of flipped classroom in health professions education in China: A systematic review. *Journal of Medical Education and Curricular Development.* https://doi.org/10.1177/2382120520962838.

Lo, C. K., & Hew, K. F. (2017). A critical review of flipped classroom challenges in K-12 education: Possible solutions and recommendations for future research. *Research and Practice in Technology Enhanced Learning*, *12*(1), 1-22.

Mason, G., Shuman, T. R., & Cook, K. E. (2013). Inverting (flipping) classrooms–Advantages and challenges. In 120th ASEE Annual Conference & Exhibition. Atlanta: ASEE. http://www. asee. org/public/conferences/20/papers/7171/download.

Matich-Maroney, J., & Moore, P. J. (2016). Flipping the classroom in an undergraduate social work research course. *Council on Undergraduate Research Quarterly, 37*(2), 24-29.

McDonald, K., & Smith, C. M. (2013). The flipped classroom for professional development: Part I. Benefits and strategies. *The Journal of Continuing Education in Nursing, 44*(10), 437-438.

McLaughlin, J. E., Roth, M. T., Glatt, D. M., Gharkholonarehe, 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.

Moraros, J., Islam, A., Yu, S., Banow, R., & Schindelka, B. (2015). Flipping for success: evaluating the effectiveness of a novel teaching approach in a graduate level setting. *BMC Medical Education, 15*(1), 1-10.

Ng, E.M.W. (2018). Integrating self-regulation principles with flipped classroom pedagogy for first year university students. *Computers & Education, 126*, 65-74.

Oliván Blázquez, B., Masluk, B., Gascon, S., Fueyo Díaz, R., Aguilar-Latorre, A., Artola Magallón, I., & Magallón Botaya, R. (2019). The use of flipped classroom as an active learning approach improves academic performance in social work: A randomized trial in a university. *PloS one, 14*(4), e0214623.

Robinson, M. A., Robinson, M. B., & McCaskill, G. M. (2013). Teaching note—An exploration of team-based learning and social work education: A natural fit. *Journal of Social Work Education, 49*(4), 774-781.

Ryan, M. D., & Reid, S. A. (2016). Impact of the flipped classroom on student performance and retention: A parallel controlled study in general chemistry. *Journal of Chemical Education, 93*(1), 13-23.

Sage, M., & Sele, P. (2015). Reflective journaling as a flipped classroom technique to increase reading and participation with social work students. *Journal of Social Work Education, 51*(4), 668-681.

Siemens, G., & Baker, R. (2012). Learning analytics and educational data mining. *Proceedings of the 2nd International Conference on Learning Analytics and Knowledge*, 252–254.

Sletten, S. R. (2017). Investigating flipped learning: Student self-regulated learning, perceptions, and achievement in an introductory biology course. *Journal of Science Education and Technology*, *26*(3), 347-358.

Stöhr, C., Demazière, C., & Adawi, T. (2020). The polarizing effect of the online flipped classroom. *Computers & Education*, *147*, 103789.

Takahashi, J. (2019). East Asian and native-English-speaking students' participation in the graduate-level American classroom. *Communication Education*, *68*(2), 215-234.

Tang, T., Abuhmaid, A. M., Olaimat, M., Oudat, D. M., Aldhaeebi, M., & Bamanger, E. (2020). Efficiency of flipped classroom with online-based teaching under COVID-19. *Interactive Learning Environments*, 1-12.

Tashkenbayevna, S. K., Rozikovich, S. I., Vladimirovna, L. L., Sotivoldiyevich, O. M., Mukhammadjonovich, B. A., Omonboyevich, A. B., & Valikhojayevich, S. Z. (2020). Pedagogical technologies and interactive methods as a factor of increasing special knowledge of students. *Journal of Critical Reviews, 7*(6), 42-46.

Thomas, H., Webster, S., Petherick, A., Phillips, T., & Kira, B. (2020). Oxford COVID-19 Government Response Tracker (OxCGRT). Retrieved May 26, 2022, from https://covidtracker.bsg.ox.ac.uk/

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.

Turan, Z., & Akdag-Cimen, B. (2020). Flipped classroom in English language teaching: a systematic review. *Computer Assisted Language Learning, 33*(5-6), 590-606.

Venville, A., Cleak, H., & Bould, E. (2017). Exploring the potential of a collaborative web-based E-portfolio in social work field education. *Australian Social Work*, *70*(2), 185-196.

Wanner, T., & Palmer, E. (2015). Personalising learning: Exploring student and teacher perceptions about flexible learning and assessment in a flipped university course. *Computers & Education, 88*, 354-369.

Watkins, D. (2000). Learning and teaching: a cross-cultural perspective. *School Leadership & Management, 20*(2), 161-173.

Wilson, S. G. (2013). The flipped class: A method to address the challenges of an undergraduate statistics course. *Teaching of Psychology, 40*(3), 193-199.

Zhou, G., Yu, Z., Rideout, G., & Smith, C. (2021). Why don't they participate in class?: A study of chinese students' classroom participation in an international master of education program. In V. Tavares (Ed.), *Multidisciplinary Perspectives on International Student Experience in Canadian Higher Education* (pp. 81-101). IGI Global. https://doi.org/10.4018/978-1-7998-5030-4.ch005