Title: Use of Flipped Classroom Teaching to Promote Students' Active Learning

Rick Y. C. Kwan, PhD
*School of Nursing, The Hong Kong Polytechnic University, Hong Kong, Hong Kong*

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**Session Title:**
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**Keywords:**
Active-learning, Flipped-classroom and Online-learning

**References:**

**Abstract Summary:**
Flipped classroom offers students an opportunity to learn the fundamental knowledge of a subject at their own pace. Students are expected to study a self-learning package before attending the face-to-face classes. During the face-to-face contact time, students are expected to learn more non-basic contents through face-to-face interaction with teachers.

**Learning Activity:**

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<tr>
<th>LEARNING OBJECTIVES</th>
<th>EXPANDED CONTENT OUTLINE</th>
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<td>The learner will be able to discuss the advantages of using flipped classroom teaching compared with the conventional classroom teaching.</td>
<td>The problems of conventional classroom teaching is that lectures do not offer adequate time for students to think or ask questions. When they study the materials after lectures, they cannot ask questions through face-to-face interaction. Flipped classroom allows students to learn the fundamental knowledge of a subject at home. In the class, students' questions after studying the pre-class materials can be clarified by the teachers through face-to-face interactions.</td>
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<td>The learner will be able to discuss methods raising students' motivation to study the pre-class learning materials.</td>
<td>There are many methods including 1) adding the pre-class learning as a part of assessment component, 2) offering incentive for completing the pre-class learning materials (e.g. adding bonus marks, making part of the pre-class learning materials appear in the exam), 3) ensuring that the pre-class learning...</td>
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The learner will be able to name various flipped classroom learning activities. Flipped classroom learning activities include: 1) online short video, 2) online quiz, 3) mini online lecture, 4) digested short readings.

Abstract Text:

Introduction

Nursing students come from different educational background. Some of them have taken science subjects while the others do not. They usually have different learning pace. Conventional nursing trainings rely mainly on lectures and skill-demonstration labs that they treat students as empty vessels and students absorb information passively [1]. Nursing students sometimes are frustrated because some students cannot follow teachers' teaching pace in a uni-directional teaching mode (e.g. knowledge transfer relies mainly on teachers’ lecture/demonstration). There is inadequate time for students to think or ask questions in the lecture. At the time when students further study the teaching materials after the lecture, they feel even more frustrated because they are aware that there are more concepts that they don't comprehend after further thinking. However, there is a lack of chance for them to ask the teachers. The flipped classroom aims at resolving this teaching-learning pace mismatch between learners and teachers. Studies showed that flipped classroom improves students academic performance and learning satisfaction. [2]

Methods

A teaching project was developed to apply the flipped classroom concept in the subjects in the undergraduate nursing student in School of Nursing, The Hong Kong Polytechnic University. By applying the flipped classroom concept, a few teaching methods have been developed. First, pre-class study packages have been developed. These pre-class study packages include 1) Youtube video clips demonstrating the skills which are taught in the subject, 2) digested short reading illustrating the concepts which are taught in the subject, and 3) online quiz testing students understanding on the contents covered in the video clips and the short reading. These activities were launched in an official University online learning platform - Blackboard, which is highly accessible by the students. These activities were not mandatory but students were encouraged to participate.

To evaluate the teaching project, students' level of participations were measured by the statistic tracking on Blackboard (e.g. number of students who visited and completed the pre-class learning activities). Students' satisfaction level on this teaching method was evaluated by a single-item 5-point likert scale questionnaire with possible score range of 1-5. Higher score indicates higher level of satisfaction. Focus group interviews were conducted to explore students' experience on attempting the flipped classroom mode of learning.

Results

This is an on-going project. There two groups of 40 students (N=80) who completed the flipped classroom in the subject of Nursing Therapeutics in 2016 and 2017. In the 2016 class, the completion rates of varies pre-class activities range from 40-50%. The mean satisfaction score was 4.4 (SD:0.6). In the focus group interview conducted in the 2016 class, students reported that they appreciate the self-learning mode as they can study the materials at their own learning pace. Students also appreciated that clarification of individual questions in the face-to-face contact time. However, students reported that they were too busy and they usually forgot to do the activities. In the 2017 class, some revisions have been made in response to students feedback in the focus group interviews. For example, computer generated email reminding them to attempt the pre-class learning materials, incentives in term of setting some pre-class...
learning contents as exam questions. To date, the completion rates of the online activities have increased to 70-80%. Both the satisfaction survey and focus group interview have not been conducted as it will be conducted after the completion of the subject by the summer 2017.

Discussion

Students were satisfied with the flipped classroom teaching methods as evidenced by the satisfaction score and focused group interview findings. These findings agree with what have been reported in the literature. [2] The participation rate was not satisfactory in 2016, but it has greatly improved in the 2017 class. This shows that methods used to attract students to participate are individualized. Teaching methods should be adjusted according to students’ individualized learning motivation, which could be identified by focus group interviews. This project shows that timely reminder and giving incentive (e.g. putting some pre-class learning materials in the exam) may improve the participation. This educational project is still developing. Further studies should also evaluate its effects on students’ academic performance and learning proactiveness.

Conclusion

Flipped classroom is feasible to be used for nursing education. It is highly satisfied by nursing students. However, teaching methods improving students’ participation may varies across different learning cultures. Flipped classroom teaching contents should be carefully developed in response to students’ preferences. Focus group interview may be useful to identify the students’ preferences. This study has not provided evidence on the effect of flipped classroom on students’ academic performance and learning proactiveness. Yet, they are important to be examined in the future.