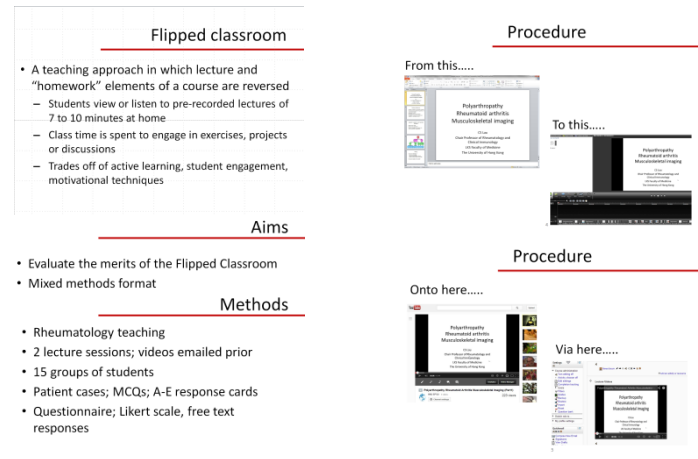


Abstract

The utilisation of video based materials prior to a teaching session with active problem solving during forms the basis of the novel flipped classroom instruction. Our study evaluated the use of this format during the teaching of rheumatology to third year medical students. 87/106 students evaluated this format through the use of a strongly disagree (1) to strongly agree (5) Likert scale and provided mean scores of 3.7 to 4.1 for statements allied to better understanding, preparedness, peer and teacher interaction, peer to peer problem solving, motivation, usefulness, achievement of learning outcomes and a desire for future classes to be delivered in this way.

From a qualitative perspective, students commented that this format allowed for active engagement, discussion, consolidation of knowledge, immediate feedback, application of theory to real life patient problems and the ability to watch and revisit the video material as necessary. Potential downsides included the lack of an electronic voting system, the perceived heavy workload and the fact that this form of interaction may not be best suited to East Asians.

The flipped classroom allows for worthwhile reflection of clinical knowledge and subsequent application. The findings from this initial study are encouraging and we plan to continue work on evaluating this format alongside other forms of delivery



| Cases discussed | Case presentation | Results - Questionnaires | Statement | | | | | | | | | | | | | | | | | | |
|--|--|--|--|---|------------|------|---|------|------|---|------|------|---|------|------|--|---|--|--|------|------|
| <ul style="list-style-type: none"> • Hypermobility syndrome • Fibromyalgia • Lyme Disease • Polymyalgia rheumatica • Gout • Osteoarthritis • Rheumatoid arthritis • Systemic lupus erythematosus | <ul style="list-style-type: none"> • Brief history plus clinical signs and investigation findings • Differential diagnoses • Further investigations • Clinical management • Pathophysiology of condition • Free interactive discussion | <ul style="list-style-type: none"> • 87/106 students (82% RR) | <table border="1"> <thead> <tr> <th>Statement</th> <th>Mean Score</th> <th>SD</th> </tr> </thead> <tbody> <tr> <td>Having access to lecture videos/recorded PowerPoint PRIOR to attending the teaching session helped me to understand the key concepts/issues addressed</td> <td>4.14</td> <td>0.70</td> </tr> <tr> <td>I felt better prepared to participate in the teaching session /discussion as a result of having access to lecture material PRIOR to attending the session</td> <td>4.03</td> <td>0.77</td> </tr> <tr> <td>The teaching session provided opportunities to engage in active problem-solving with my peers</td> <td>3.83</td> <td>0.80</td> </tr> <tr> <td>The teaching session provided opportunities to engage in active problem-solving with my peers</td> <td>3.83</td> <td>0.77</td> </tr> <tr> <td>The access to material BEFORE and the in class activities motivated my interest in the topic</td> <td>3.75</td> <td>0.81</td> </tr> </tbody> </table> | Statement | Mean Score | SD | Having access to lecture videos/recorded PowerPoint PRIOR to attending the teaching session helped me to understand the key concepts/issues addressed | 4.14 | 0.70 | I felt better prepared to participate in the teaching session /discussion as a result of having access to lecture material PRIOR to attending the session | 4.03 | 0.77 | The teaching session provided opportunities to engage in active problem-solving with my peers | 3.83 | 0.80 | The teaching session provided opportunities to engage in active problem-solving with my peers | 3.83 | 0.77 | The access to material BEFORE and the in class activities motivated my interest in the topic | 3.75 | 0.81 |
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| <p>What were the best things about this session?</p> <p>Thanks for the extra effort :)</p> | <h3>The teacher</h3> <ul style="list-style-type: none"> • Thinking about the teaching approach and how to design the flipped classroom • Learned how to use new software to record lectures • Developed quizzes for students | <h3>Possible downsides</h3> <ul style="list-style-type: none"> • Maybe a reference for the colour code of the MCQ answer cards so that those who are not holding the cards know what answers are being given • Electronic voting system should be explored so that each individual can participate • Heavy workload for students, despite interesting content • It is a cultural problem that this kind of interactive session does not have optimal participation – treat the Chinese | <h3>Future studies</h3> <ul style="list-style-type: none"> • Pre and Post • Two modality comparison | | | | | | | | | | | | | | | | | | |