

Advances in medical education and practice: student perceptions of the flipped classroom

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Dear editor

We read with great interest the article by Ramnanan and Pound which reviews the benefits and limitation of the “flipped classroom” (FC) approach to teaching in medical schools.¹ As fifth-year medical students from three separate UK medical institutions, we appreciate the emphasis placed on the development of an effective medical school curriculum that enables students to critically engage with the both scientific and clinical concepts. We hence share our views on the development of the FC approach to teaching.

Much like the authors suggest, the traditional lecture-based teaching model forms the skeleton of most medical school curriculums in the UK. Selective institutions have combined this traditional system with innovative teaching methods, such as problem-based learning and case-based learning – both of which are variations of the FC learning model. Such integrated schemes are shown to achieve higher ratings of student satisfaction when compared to purely traditional models.² Fortunately, medical education in the UK is now integrating more FC learning opportunities. For example, the proposed 2020 MBBS syllabus for King's College London focuses on introducing greater student-directed learning initiatives into the core curriculum.³

As Ramnanan and Pound discuss, the FC model provides a student-centered teaching strategy that shifts the focus of the learning process onto the individual. Studies suggest that such schemes emphasize the development of cognitive skills like problem solving and reasoning.⁴ However, the authors fail to appreciate that the most significant strength of the FC approach lies in its flexibility. Generally, many students feel that lectures provide a detached and passive learning environment. FC schemes on the other hand facilitate greater student autonomy in approaching new information, encouraging personalized learning strategies and individual time management. Thus, it is not surprising that Ramnanan and Pound claim that FC teaching methods greatly increase student satisfaction.

While the article extensively reviews the benefits of the FC approach to teaching, little is mentioned about its associated limitations. The underlying success of the FC approach relies on the concept of “self-pacing” whereby students are expected to self-motivate. Students may find self-motivated tasks challenging and, therefore, struggle to review supplementary material, thus reducing the efficacy of the FC model. Reduced instructor contact can also negatively affect

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students. Research suggests that most learners prefer face-to-face interaction with their tutors rather than tele-based communication methods. Furthermore, the inability for tutees to ask tutors questions immediately to clarify given information is another significant limitation imposed by FC schemes.⁵

This review emphasizes the improvement in student satisfaction associated with implementing such learning models. As senior medical students, we highly recommend the application of FC learning models into the medical school curriculum. We encourage the development of an integrated program with a combination of traditional learning opportunities and FC-based teaching modules. By engaging medical trainees through a variety of teaching methods, medical schools will equip future doctors with various cognitive skills that will help them develop into safe and successful doctors.

Disclosure

The authors report no conflicts of interest in this communication.

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Authors' reply

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Dear editor

We appreciate the commentary from the medical students (Sait et al) regarding our review of student perceptions of the flipped classroom (FC) in undergraduate medical education.¹ These insights were particularly valuable as these students, themselves, had been exposed to the FC model in their own medical training. However, some of their comments regarding our review were either inaccurate or reflected misunderstanding of our paper. These authors claimed that we failed to acknowledge the most prominent strength of the FC approach that it promotes student autonomy. Our review noted that there were several frequently cited reasons that the FC approach has been perceived positively by medical students. These included the use of engaging multimodal learning resources during the preclass content orientation phase. As we described, learning resources that could be accessed by learners at any time, as often as they desired, were generally appreciated by medical students in the studies reviewed.¹ The facilitation of self-directed learning, both in the preclass phase and in the face-to-face active learning environments, has typically resulted in strong satisfaction in the medical education FC, including our own FC application in gross anatomy.²

Sait et al also stated that our review did not appropriately discuss the limitations of the FC approach. However, this viewpoint fails to take into account that our review described that medical students have perceived several caveats with the FC model. While medical students have generally expressed satisfaction with preclass and in-class components of the FC, several studies that we reviewed depicted student frustrations with the preclass content orientation phase. Specifically, students were dissatisfied when the material provided was not perceived to be appropriate in

terms of difficulty, time-intensiveness, or direct relevance to the subsequent in-class learning objectives.¹ Further, our review also highlighted issues that arose during the face-to-face active learning component of the FC that led to perceived inefficiency of achieving learning objectives. The active learning environment could be impaired by inadequate student preparation, lack of faculty support and structure during discussions, and facilitators reverting to teacher-centric lecturing. These caveats were all taken from student perception data from the studies we reviewed. In addition, another important caveat (one that did not arise from subjective student feedback) was acknowledged in our study – it is currently unclear whether the FC objectively (i.e., via assessment data) improves student learning in the context of medical education.

In summary, we do appreciate that these medical students read our paper with great interest and that they were willing to draw from their own (positive) experiences as learners of FC applications in their own medical schools. While this student commentary may have been based on their own anecdotal experience, our review was restricted to evidence disseminated in published studies. The reviewed studies clearly indicated that the FC generally results in strong student satisfaction, owing, in part, to promoting student self-directed learning prior to and during classes. However, there have been student concerns with FC applications in medical education as well. There is also the question regarding whether this approach has any impact on student learning. As the FC approach is being increasingly applied to undergraduate medical education, future studies are necessary to clarify how this approach should be best applied and will lend insight into how the FC should be optimized to best suit modern medical students.

Disclosure

The authors report no conflicts of interest in this communication.

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