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**LETTER** 

# Advances in medical education and practice: what millennial medical students say about flipped learning

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## Dear editor

We thank Pettit et al<sup>1</sup> for their study, which explores the opinions of millennial medical students with regards to "flipped learning". As penultimate year medical students, we place great value in the analysis of feedback from students to develop an improved curriculum. We share the view that our generation has a desire for variety and flexibility in pedagogical formats. It must be noted, however, that student preference may change as they progress through medical school and a key factor in developing an effective curriculum is assessing the impact on attainment in addition to collecting student feedback.

Medical schools in the UK are increasingly adopting a flipped learning approach where students undertake core learning components independently while in-class time is allocated to interactive student-centered activities to consolidate learning. The curriculum at Barts and The London School of Medicine places considerable emphasis on problem-based learning, which is a similar pedagogy to flipped learning whereby students research specific learning objectives based on a patient scenario, before convening with peers at a case-based discussion.<sup>4</sup> There is a wide variety among medical schools with regards to the extent of flipped learning in the curriculum,<sup>2-4</sup> and Pettit et al have sought to find students' views on the optimum amount of a curriculum to flip.1

The authors make a valid point that students are more attentive learners when the format gives them greater choice.1 It must also be noted that diversity in the millennial generation is a key factor in determining effective teaching strategies. Pettit et al mention that millennials are technology savvy, and this may be true in comparison to previous generations. However, from our personal experiences, we know students range from those who use a pen and notepad in lectures to those who type up notes on their laptop. The variety in learning styles would explain the surprising result in this study which showed that many students preferred more than 50% of lecture-based classes.<sup>1</sup>

A key limitation mentioned by the authors states that only first year students were used in this study. We believe that learning styles develop as students advance through their degree and flipped learning may become preferable in later clinical years which require more independence. A significant portion of the third year curriculum at our institution adopts a flipped learning approach. The endocrinology module is delivered as pre-recorded vodcasts followed by in-class case-based discussions. This proved to have the highest average attainment across the year group in comparison to other modules taught in traditional

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lecture-based classes. Improved student performance with flipped learning is further demonstrated in other studies.<sup>5</sup>

As senior medical students, we strongly advocate for increased implementation of flipped learning in the medical school curriculum. Further research is required to assess the value of this pedagogical approach in student attainment in addition to the study carried out here by Pettit et al. We thank them for their work and hope that this leads to continuing improvement of medical education which develops competency and compassion in tomorrow's doctors.

#### **Disclosure**

The authors report no conflicts of interest in this communication.

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