

Condensing embryology teaching: a medical student perspective

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Dear editor

We read with great interest the study by Kazzazi and Bartlett,¹ which explores a potential method for teaching embryology to medical students. This consisted of a 2-h peer-teaching session, with an emphasis on the clinical aspects of this subject. As the modern medical curriculum often struggles to include adequate teaching of embryology, this study by Kazzazi and Bartlett¹ is of particular relevance. Indeed, findings by Hamilton and Carachi² also convey medical student dissatisfaction with embryology teaching.

As medical students at King's College London who have already received embryology teaching, we understand how conceptually challenging embryology can be for first year medical students and, thus, would like to offer additional insight. We first received embryology teaching in our first year, which consisted of an introductory lecture that covered the basic principles. We feel this was fundamental to our understanding of the complexities discussed in subsequent lectures. The condensed course provided by Kazzazi and Bartlett¹ may best be delivered as a similar introduction to embryology, motivating students to engage with further learning offered.

Although we appreciate the impact that the condensed course design had upon the medical students within the study, we believe that further improvements can be achieved. We have also benefited from peer-led teaching sessions similar to those described by Kazzazi and Bartlett.¹ However, our teaching was delivered to smaller groups (8–10 students), which we felt to be more engaging than our lectures. This is supported by Cendan et al,³ who demonstrated an increase in student satisfaction and examination percentile scores in small group teaching when compared to that of a large lecture group. Consequently, providing this course in a small-group format may enhance student satisfaction and learning outcomes.

Furthermore, while these condensed sessions can instill immediate confidence in the student, we have found that the long-term retention of knowledge is questionable. At our institution, much of our learning is delivered online, through virtual patient-based clinical scenarios. The provision of such scenarios, we believe, would prove beneficial when combined with the condensed teaching method, and highlight the clinical consequences of embryopathies. Several studies have attempted to evaluate the effectiveness of online virtual patients within medical education, with many concluding that it is a valuable tool.^{4,5} This teaching method allows students to revisit the topic whenever they

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feel the need to, negating the short-term memory issue that may be encountered with Kazzazi and Bartlett's¹ method. Furthermore, the online scenarios allow the standardization of teaching, a problem that may be encountered with small group peer teaching.

In conclusion, we believe supplemental condensed embryology teaching, as suggested by Kazzazi and Bartlett,¹ would be beneficial to the understanding of this challenging topic. However, from our experience, we would encourage this teaching to be delivered to a smaller group and be further supplemented with additional online patient-based scenarios to enhance learning and the retention of information. We hope this will provide a more thorough base knowledge of embryology and improve clinical knowledge in related specialities.

Disclosure

The authors report no conflicts of interest in this communication.

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Authors' reply

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Dear editor

We read with interest the response by Patel et al that called for further improvements in our work through downsizing the group sizes, online resources and case-based discussion.

The authors recommended the use of patient-based discussions. At some institutions, including our own, embryology teaching begins in the first weeks of the medical curriculum, a strong impetus to favor clinical importance of information over case-based discussion. The clinical knowledge-gap between medical students in their early and late degree means that adopting the proposed technique would further complicate the teaching due to the requirement to explain non-embryological methods of clinical deduction. This is against the purpose of the session, as it may act to overwhelm the new students. Therefore, it is important to highlight clinical application—for example with neural tube disorders or shingles, but not to introduce topics such as interpreting bloods, investigations, or describing dermatological disease, as these are beyond the scope of the pre-clinical curriculum.

Patel et al acknowledged the conceptual difficulties of embryology, and sought even further improvements in confidence through small-group teaching. To achieve this, the session would have to be taught again over 20–30 times and multiple unspecialized trainers instructed to deliver the course in a consistent manner. This is very resource intensive and may not align with the priorities of the medical schools,

who are already finding efficient teaching difficult, due to a crowded curriculum.¹

We found questions of long-term retention difficult to comprehend, since this argument is applicable to any teaching method, and the results were only achievable through a desirable double-blind study. This would be incredibly difficult to do, as it would involve ensuring that students did not exchange information from the two types of teaching. Furthermore, students struggle with the comprehension of embryology, and so, to say the long-term effect is questionable, is to suggest that students also currently fail with embryology.

We do, however, acknowledge and welcome the use of supplemental material, and suggest that the authors do go on to both promote and create such resources. The creation and use of these resources would certainly improve students' confidence with the subject, and also aid the various types of learners out there. The course could act as a foundation for which further information could be distributed.² In doing that though, it will be important to ensure that the course remains fully comprehensive, and information is not re-classed as "supplemental".

We are very grateful for the feedback that we have received from our peers, and would also like to extend our thanks to the wider readership that have contacted us directly to implement similar teaching programs at their institutions. We hope that the authors will continue with their enthusiasm to deliver effective teaching programs at their respective institutions. We presented a novel and resource-limited method of teaching embryology to medical students in a way that engages them, but also reflects the wider pressures that they face from the rest of the course.

Disclosure

The authors report no conflicts of interest in this communication.

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