

# Integrated pathology and radiology learning for a musculoskeletal system module: an example of interdisciplinary integrated form

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## Dear editor

We read with great interest the paper by Atta and AlQahtani<sup>1</sup> which provides a model for integrated interdisciplinary teaching into undergraduate education. While they identify improvements in academic performance and student satisfaction, this method may have limitations integrating into clinical application. As students, we agree that integrated interdisciplinary education is effective and believe it is imperative for holistic learning, bridging the gap between academic and clinical medicine. This pedagogy simulates real-life practice, as clinical care typically involves a multidisciplinary approach. At Imperial College London (ICL), interdisciplinary teaching is delivered in a multimodal method, emphasizing clinical application.

One method in which interdisciplinary teaching is integrated in teaching clinical sciences and pathology at ICL is through use of case-based discussions and patient interviews within lectures and tutorials. These are typically used in oncology teaching, with multidisciplinary consultant input. They involve discussion of speciality roles, management and opinions on specific cases after didactic teaching of physiology, pathology, and radiology. Tutorials also involve group work where teams are given speciality roles and asked to deliberate the assessment and management of cases. Occasionally, patients are invited to give students an understanding of how clinical decisions affect them, providing a holistic approach to teaching. Head et al<sup>2</sup> investigated the efficacy of case-based discussion in integrated palliative–oncology teaching, which yielded quantitative and qualitative improvements in student's appreciation of interdisciplinary collaboration and palliative care knowledge.

Another commonly employed integrated teaching method in UK medical schools (including ICL) is problem-based learning (PBL). Students are assigned to groups, given scenarios and speciality roles, and then encouraged to discuss between themselves, providing peer-to-peer teaching after a period of self-directed study. PBL encourages meta-cognition and independent learning, in addition to providing a platform for interdisciplinary reasoning.<sup>3</sup>

Integrated interdisciplinary teaching also shows promise in undergraduate clinical teaching, as exemplified by the Integrated Clinical Apprenticeship at ICL.<sup>4</sup> This program integrates primary and secondary care in a longitudinal model, involving following a caseload of selected patients in primary care and attending their hospital appointments and admissions. This is supplemented with weekly tutorials given by

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general practitioners and specialists. While still undergoing analysis, the program is well-received by students.<sup>4</sup> Other similar longitudinal integrated teaching studies, such as one by Hirsh et al,<sup>5</sup> identify improvements in academic performance, patient centeredness, and professionalism.

We believe that integrated pathology–radiology teaching can be improved with methods that provide clinical context and give roles and responsibilities to students. Agreeably, interdisciplinary teaching is an effective education strategy. But we propose a multimodal integrated approach that could perhaps be more effective, involving PBL, clinical cases, and longitudinal learning as additions to the author’s proposed model to provide applied clinical context in undergraduate education.

## Disclosure

The authors report no conflicts of interest in this communication.

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## Authors' reply

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## Dear editor

This discussion with peers and experts is indeed very exciting.

Our experience in the present study<sup>1</sup> was focused in the basic years to enhance the pathological and radiological practical skills in identifying the lesions grossly and histopathologically, and make correlations with the radiological findings. So, it is applied in the basic years, which is in contrast to the interdisciplinary teaching model of teaching clinical sciences and pathology at Imperial College London<sup>2</sup> through which case-based discussions and patient interviews within lectures and tutorials is used, which is more suitable to be implemented for clinical years. As our curriculum is a student- and patient-centered, problem-based learning (PBL) is one of the educational tools among seminars and SDL that is heavily addressed in our curriculum as being expressed in all modules.<sup>3,4</sup> The topic is selected and a suitable tool is applied in the form of PBL, seminars, case-based learning, etc. PBL is being conducted through two sessions.<sup>5</sup> The students can read and enrich knowledge through discussion

with the peers, but the practical skills of pathology on how to identify and describe the lesion on a gross specimen, how to perform histopathological diagnosis and report the same, how to describe the radiological findings and report the same are required. In our model of radiopathologic integrations, all these skills will be acquainted by students and the radiological findings will be easily identified by students even in early academic years; sometimes, this is not completely acquired or achieved through the use of Imperial College London model or PBL. So, the current model is a complementary approach for enhancing the pathology/radiologic skills along with other tools such as PBL seminars and case-based scenario.

## Disclosure

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