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# Elements of Effective Teaching in Higher Education: Implication to Anatomy Education

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## ABSTRACT

Teaching anatomy is a challenging task to anatomists as they need to stimulate students' three-dimensional visualisation ability. Despite the needs for lecturers to be competent in instructional design and delivery, many anatomists are unsure about elements of effective teaching as the fundamental work on this area is scarce. Since anatomy is mainly taught in the higher education institutions, it is pertinent to find a comprehensive definition and framework of effective teaching in universities that could be adapted into anatomy teaching. Hence, we performed a scoping review to unearth the features of effective teaching in higher education using the five-stage framework of Arksey and O'Malley, namely identification of research question, identification of relevant study, selection of suitable study, data charting, and result collating and reporting. Three databases (Google Scholar, Scopus and PubMed) were searched using two search terms with a Boolean combination: "effective teaching" and "higher education." The initial pool of 1,708 topics was assessed for duplication, and study eligibility was evaluated using inclusion and exclusion criteria. Data were abstracted from 14 original articles by two independent researchers and a thematic analysis was performed. Findings revealed the following categories of effective teaching elements, which have been proven effective in the achievement of learning outcomes: (a) pragmatic teaching, (b) learning support, and (c) optimised classroom management. Each theme overlies several sub-themes that reflect substantial numbers of effective teaching elements. The review provides evidence that a teacher's role is not limited to teaching but includes the provision of support to students and management of the classroom environment to optimise learning. This article previews the utilisation of these teaching elements in anatomy education and its implication to future medical education.

**Keywords:** *Effective teaching, Anatomy education, Pragmatic teaching, Learning support, Classroom management*

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## INTRODUCTION

Anatomy is an important medical subject that requires ability of anatomists to stimulate students' three-dimensional visuospatial ability and mental imagery when learning anatomical structures (1). In view of its complex nature, anatomy subject is often taught through multimodal approaches and tools (2). Hence, anatomy educators need to be vigilant and creative in creating effective teaching session that could facilitate the development of desired learning outcomes (3). Despite playing fundamental roles in anatomy teaching, many anatomists were unsure about their teaching ability and unaware about effective pedagogical elements (4). Ironically, not many of them had formal training in teaching and learning before becoming anatomy teachers. Most of them are qualified as anatomists after completing postgraduate programmes in anatomy or related fields, which are mostly lacking in pedagogical input (5–6). Since anatomy is mainly taught in the higher education institutions, it is pertinent to find a comprehensive definition and framework of effective teaching in universities that could be adapted into anatomy teaching.

Teaching is a scholarly activity that requires contextual expertise in a subject area (7). For the past several decades, teaching in higher education institutions has undergone a significant evolution in term of methodologies and tools used for teaching (8). With the advancement of information technology, university teaching is no longer limited to the lecture-hall setting. Instead, distance learning is made available with the use of electronic learning (e-learning) and

mobile learning (m-learning) (9–10). The adoption of these teaching methods created a borderless educational environment, which enabled students to learn at their pace. Nevertheless, an accepted comprehensive definition of effective university teaching is lacking (7). With the increasing demand for high-quality university teaching, debate within the higher education community continues on what factors contribute to teaching effectiveness (7).

Effective teaching in higher education is a contested concept with different definitions (11). The term has been defined in various ways according to teacher attitude, ideology and expertise on the subject matter; ability to enhance students' learning performance; and effort to prepare students in using high-level cognitive processing during learning (12–13). Various attempts were made to describe the characteristic of effective teaching using different theoretical perspectives and disciplinary stand points through quantitative and qualitative approaches (14–16). Kreber (17) highlighted that a good teacher will know how to motivate students, deliver concepts and information efficiently and assist students to handle obstacles related to learning. Hence, a teacher's role to effective teaching and influencing students' achievement is undeniably important. The conventional teacher-centric view of teaching assumes the teacher as the source of knowledge who didactically delivers information. Many students do not favour traditional teaching because it does not emphasise on active participation in class and limits autonomy in learning (18). Hence, the traditional teaching method has been replaced by the student-