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# Investigating the Benefits of Integrated Anatomy Instruction: A Cognitive Load Theory Perspective

Saiful Bahri Talip<sup>1,2</sup>, Zul Izhar Mohd Ismail<sup>2</sup>, Siti Nurma Hanim Hadie<sup>2</sup><sup>1</sup>Department of Basic Medical Sciences, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Sarawak, MALAYSIA<sup>2</sup>Department of Anatomy, School of Medical Sciences, Universiti Sains Malaysia, Kelantan, MALAYSIA

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## ABSTRACT

Declining anatomy knowledge of junior doctors has been linked to clinical error judgement and medicolegal litigation. To overcome the problem, anatomy educators have introduced many teaching initiatives during undergraduate study that might promote anatomy knowledge acquisition and retention, including anatomy teaching using integrated instruction. Anatomy instruction can be integrated in terms of its contents and teaching approach. Learning from integrated anatomy instruction allows students to relate anatomy subjects with different subdisciplines and to comprehend related clinical context for future application. On the other hand, the integrated approach for anatomy teaching caters to different types of learning styles, therefore ensuring optimal learning. Nevertheless, causal relationships between integrated anatomy instruction and student learning has never been explicitly explored. Hence, this article aims to unearth the elements of integrated anatomy teaching that promote learning through instructional design theory, namely, cognitive load theory (CLT).

**Keywords:** *Horizontal integration, Vertical integration, Cognitive load theory, Integrated teaching, Anatomy knowledge*

## CORRESPONDING AUTHOR

Siti Nurma Hanim Hadie, Department of Anatomy, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia

Email: [snurma@usm.my](mailto:snurma@usm.my)

## INTRODUCTION

Anatomy is an important basic science subject in medical education due to its high clinical relevance (1–2). Having adequate anatomy knowledge is a prerequisite for safe clinical practice, as such knowledge is essential for performing physical examinations, clinical procedures and surgical interventions (3–4). There is an increasing concern among clinicians about the high incidence of surgical error and

medicolegal lawsuits, which could be due to the insufficient anatomy knowledge of medical practitioners (5–9). Physicians and surgeons universally affirm that the anatomy knowledge of medical graduates is critically poor and lower than the acceptable levels for safe clinical practice (4, 10). Likewise, several medical students are insecure about their anatomy knowledge and their ability to apply this knowledge efficiently (11). Such perceived suboptimal anatomy knowledge has triggered anatomy educators