# Team-based self-directed learning enhanced students' learning experience in undergraduate surgical teaching

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### ABSTRACT

Introduction:To evaluate the effectiveness of team-based self-directed learning (SDL) in the teaching of the undergraduate Year 5 surgical posting.

Materials and Methods: A quasi-experimental study was conducted to develop and administer a team-based SDL versus a conventional SDL to teach undergraduate surgical topics. One hundred and seventy-four medical students who underwent the Year 5 surgical posting were recruited. They were assigned to two groups receiving either the teambased SDL or the conventional SDL. Pre- and post-SDL assessments were conducted to determine students' understanding of selected surgical topics. A selfadministered questionnaire was used to collect student feedback on the team-based SDL.

Results: The team-based SDL group scored significantly higher than the conventional SDL group in the post-SDL assessment (74.70  $\pm$  6.81 vs. 63.77  $\pm$  4.18, t = -12.72, p < 0.01). The students agreed that the team-based SDL method facilitated their learning process.

Conclusion: The study demonstrated that the use of a teambased SDL is an effective learning strategy for teaching the Year 5 surgical posting. This method encouraged peer discussion and promoted teamwork in completing task assignments to achieve the learning objectives.

#### **KEYWORDS**:

Self-directed learning; team-based learning; undergraduate; surgical training

## INTRODUCTION

Self-directed learning (SDL) is a learning process in which students take the initiative, with or without guidance from others, to formulate their own learning goals, select resources for learning, implement learning strategies and evaluate the outcomes achieved.<sup>1</sup> The learners are primarily responsible for identifying their learning needs and formulating learning objectives.<sup>2</sup> SDL encourages in-depth learning and thinking, prepares students for lifelong learning and improves knowledge retention more than traditional courses.<sup>3,4</sup> In medical education, this allows students to keep abreast of the latest advancements in the world of medicine and helps them become better doctors. However, despite the proven advantages of SDL over conventional teaching in medical education, the introduction of SDL into undergraduate medical curricula has faced many challenges. Many have found it difficult to precisely define SDL and implement SDL modules within the existing framework of medical education.<sup>5</sup> The indiscriminate application of SDL principles and poorly prepared lecturers and/or students have at times led to resentment at the introduction of SDL rather than welcome.

The Universiti Malaysia Sarawak (UNIMAS) medical programme (Doctor of Medicine, M.D.) is a five-year undergraduate program. This program has adopted a fully integrated curriculum for the first two pre-clinical years that includes both problem-based learning (PBL) and SDL. In the subsequent three clinical years, the students undergo clinical rotations in multiple disciplines. SDL has also been introduced to the clinical postings for many years, including the surgical posting.

Students are exposed to a basic surgical posting in Year 3 and a final surgical posting in Year 5. The learning objectives of both surgical postings are clearly defined and well-structured according to Bloom's taxonomy and matched to the medical programme learning outcomes. The teaching and learning activities in surgical postings (Years 3 and 5) include both teacher- and student-centred learning strategies—for example, didactic lecture, bedside teaching, seminars (prepared and presented by students) and SDL. The essential topics in the surgical logbook are selected for SDL, but the students might not have the chance to observe all these procedures in operation theatres or wards due to tight posting schedules and the dynamic hospital environment.

Over time, it was noticed that most students were unable to appreciate the concept of SDL and, thus, performed unsatisfactorily on certain surgical topics in the end-ofposting exam. Thus, the current SDL activities may not enhance the learning process or fully achieve the learning objectives of surgical postings as stated in the course plan. Given the inadequacy of existing SDL offerings, the Department of Surgery has planned to adopt a team-based approach in the SDL sessions.

Team-based learning (TBL) is an instructional method that promotes problem-solving and teamwork.<sup>6</sup> It involves teaching and learning in small groups and does not require large numbers of tutors. This learning strategy allows

This article was accepted: 17 December 2022 Corresponding Author: Sim Sze Kiat Email: sksim@unimas.my