

The impetus to interactive learning: Whiteboarding for online dental education in COVID-19

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1 | PROBLEM

Education worldwide saw an overnight transition from on-site classes to e-learning to facilitate the “new normal” during the COVID-19 pandemic, which involves advanced technologies.¹ Blended learning in dental education uses

online tools alongside traditional teaching and improves clinical skills and critical thinking.²

Surgical periodontics forms 70% of the final-year undergraduate dental curriculum in Malaysia. Even with blended learning methods, many students find regular online lectures on these topics confusing. Due to the

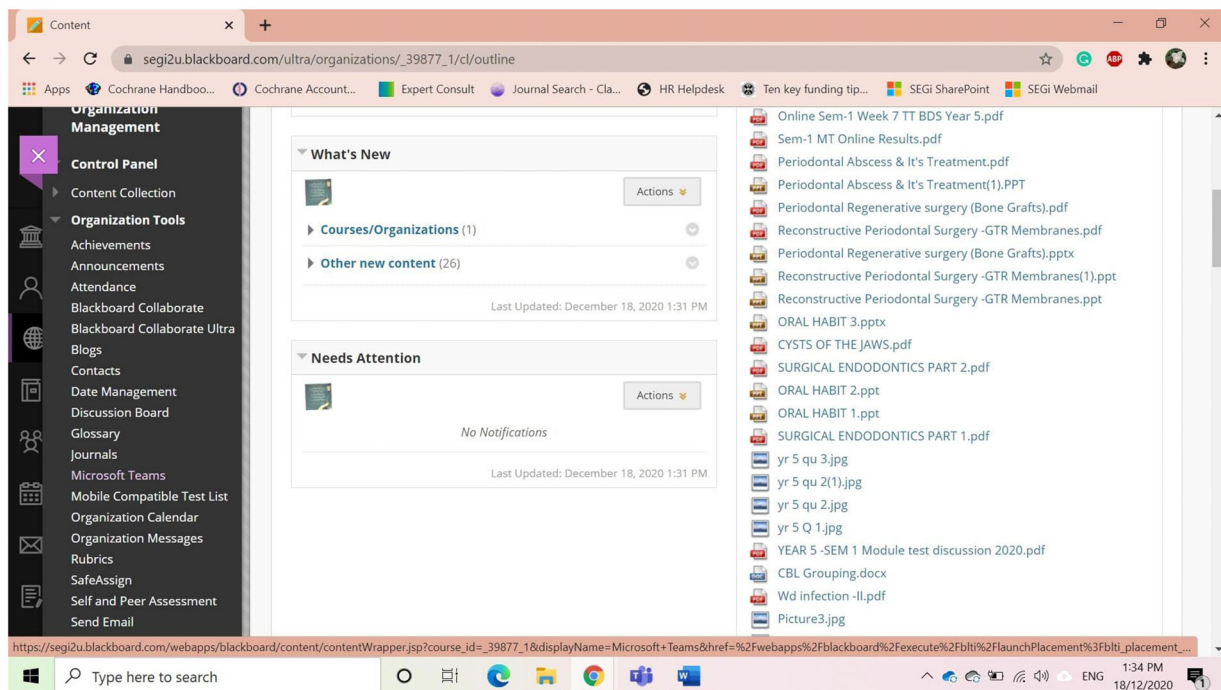


FIGURE 1 Online platform for Microsoft Teams on Blackboard for year 5 students

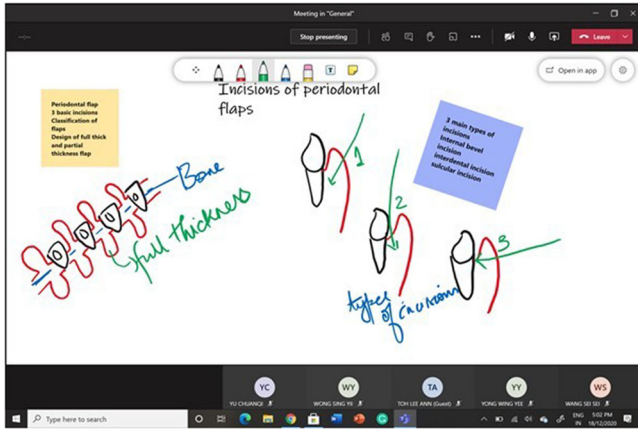


FIGURE 2 Students kinesthetic involvement using Microsoft Whiteboard for learning periodontal flap designs using mouse/pen

lockdown, their knowledge is limited to online teaching and virtual tools. Focused group discussions with our students revealed that even when using a blended approach to teaching, students lack a deeper understanding of surgical topics as they are challenging to understand.

2 | SOLUTION

Microsoft Teams are highly organized, customizable, and works seamlessly with other Microsoft Office apps.³ It is our school’s preferred online teaching platform (Figure 1).

Microsoft Whiteboard (WB) is a collaborative digital canvas that allows participants to ideate, create, and collaborate visually. It allows the users to share ideas with others through drawing or writing as they would with ink.³ Our goal was to improve the learning of periodontal

surgery principles by kinesthetically participating in exam-oriented topics like flap designs, incision principles, which form a significant part of their assessment (Figure 2).

Fifty final-year undergraduate dental students of SEGi University participated. They were unaware of the research to prevent the Hawthorne effect toward various learning resources, as the lesson plans were part of the regular curriculum. Each session lasts 120 minutes. We evaluated students’ perceptions of WB’s use as a learning resource and how it varied from other alternative learning resources, such as PowerPoints, videos followed by self-assessment tools like Kahoot.

3 | RESULTS

We received a response rate of 100%. Results showed that 92% of the students agreed that “students benefitted” from WB sessions, followed by 8% for the video and Kahoot.

The common concerns were that 20% did not have optimal internet connectivity, and 16% had difficulty using the mouse for illustrations. Albeit Kahoot being “fun and interesting,” watching a video and answering a quiz did not make them confident enough to understand the steps involved in periodontal surgery in the limited time. Overall, students’ acceptance of the WB as a teaching tool was highly satisfactory in understanding the topics. The feeling of being “part of the community” was higher due to active interaction (Figure 3). Some students expressed interest in learning WB technology to enhance their skills.

The interactive WB (IWB) tool is the missing link between clinical teaching and digital learning.⁴ It has been shown to improve teaching by adding to the lessons’ visual

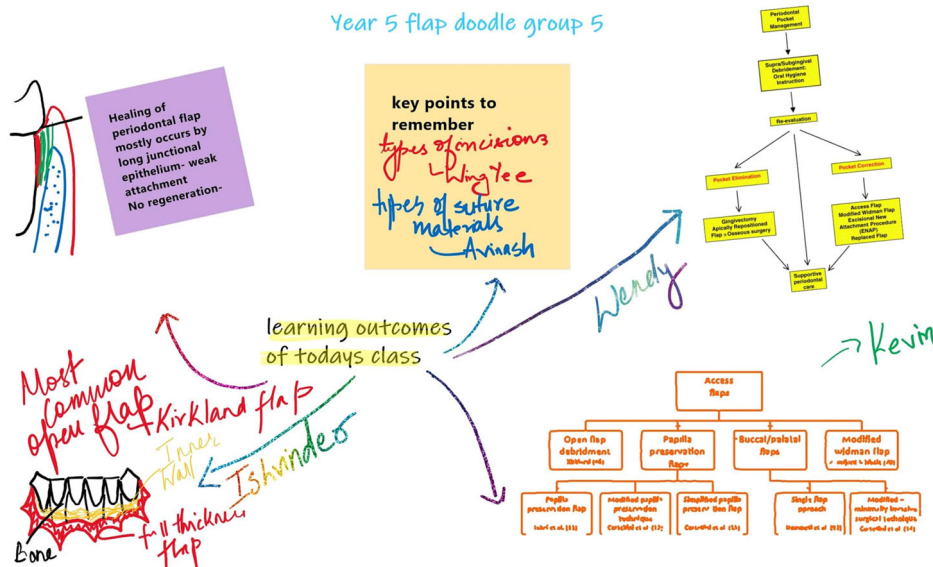


FIGURE 3 Focussed group discussion of the learning outcomes of periodontal flaps using Microsoft Whiteboard

impact and interactivity.⁵ We found that despite using some of its features productively, certain limitations, like technical problems, unsteady internet, and difficulties in understanding instructive goals due to learner's ability and confidence level posed a challenge in learning. Even so, WB and similar tools could be used in dental education to foster an engaging student environment and an innovative pedagogical approach that adapts to digital development in the future.

AUTHORS' CONTRIBUTIONS

Avita Rath conceived and designed the analysis, and cowrote the manuscript with Preena Sidhu and Melissa Wong. Preena Sidhu and Claudi Pannuti were responsible for revisions and the final draft.

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