Google Workspace In The Anatomy Dissection Lab – Approach To Enhance Multifaceted Communication In Large Group Setting

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Introduction

Effective medical educators monitor students' learning progress and strategically adjust instruction accordingly; however, formative assessment has limitations in identifying *specific* needs, particularly *during* active large group sessions (Fig. 1).

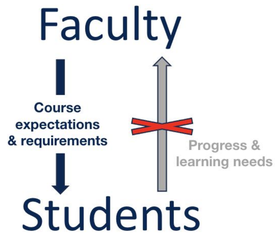

Figure 1

Recent systematic review identified five conditions that facilitate the effectiveness of large-group learning activities in higher education, including:[1]

- student–teacher and student–student interaction
- use of online teaching resources

Aims and Objectives

Using gross anatomy as a model for basic science medical education, this study aims to:

1. Develop a novel efficient, timely, and convenient mechanism for communication of students' dissection progress to peers and faculty via Google workspaces.
2. Evaluate effectiveness of using Google Workspaces as a communication tool for use in dissection, exam preparation and instruction.

Approach/Process

- In the Anatomical Foundations of Clinical Practice courses at OUWB, students (N=125) complete full-body dissections in 21 teams (6 students/team).
- **Prior to Fall 2023 (Traditional)**: Team resources for each lab included Lab Identification Checklist (LIC) spreadsheets with check boxes for tracking dissection of >1000 total structures, which were tagged on identification-based practical examinations.

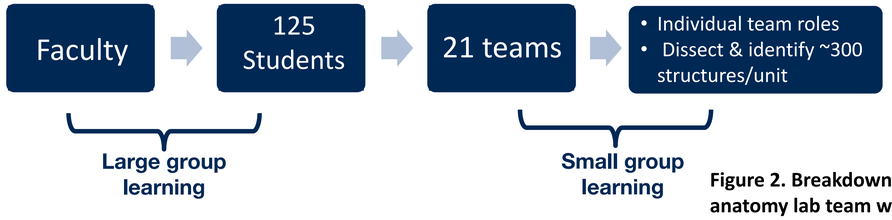

Figure 2. Breakdown of anatomy lab team work

- **Fall 2023 (Novel):** LICs were offered in shared Google Sheets (Google LLC, Mountainview, CA), with a tab for each team's lists (Fig 3). For each structure, formulas and App Script code generated the number of teams who found the structure with a list of their specific donors (Fig 4). The data were dynamic and openly accessible to students and faculty.

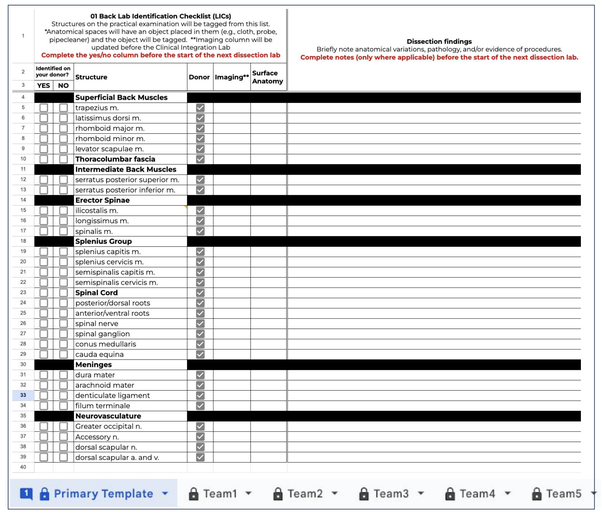

Figure 3. Sample Individual Team Lists.
Each list includes columns for students to check yes/no for finding a structure, the list of required structures, and notes of dissection findings.

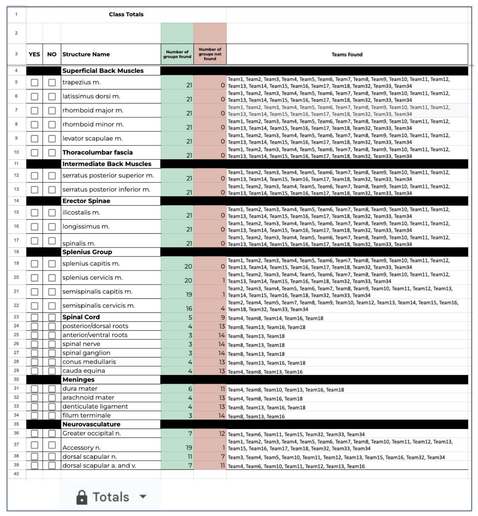

Figure 4. Sample Aggregate Data from 21 Teams.
The totals tab includes information about the number of teams that did/did not find a structure and a list of teams that did find a structure

Evaluation Plan

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- A 19 item Likert-style survey was developed in house and piloted to evaluate the utility of the novel LIC format
- The Classes of 2026 and 2027 were invited to anonymously complete the survey online
- Data are currently being collected
- Responses from the Class of 2027 (novel LIC users) will be compared to an active control, the Class of 2026 (traditional LIC users), using Mann-Whitney U tests (alpha<0.05)

Expected Results

Preliminary anecdotal feedback from the classes of 2026 and 2027 suggest the data will show that implementation of the LICs in the new Google workspaces format will allow:

- Increased student awareness of their own learning progress
- Increased communication between students during independent review
- Increased communication between students and instructors throughout the learning process

Discussion

Upon demonstration of the benefits of Google Workspaces model, a framework can be created to be used across multiple disciplines that involve large group teaching with a large breadth of content.

References

1. Oscar Jerez, Cesar Orsini, Catalina Ortiz & Beatriz Hasbun (2021) Which conditions facilitate the effectiveness of large-group learning activities? A systematic review of research in higher education, Learning: Research and Practice, 7:2, 147-164, DOI: 10.1080/23735082.2020.1871062