One Does Not Simply Integrate: Assessing Integrated vs. “Silo-ed” Anatomical Sciences

Presentation in Online Learning Module

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Introduction

The anatomical sciences are a fundamental competency in health professional education, yet in-class hours have been drastically reduced. There has been a substantial increase in the amount of adjunct online learning resources. Many resources lack integration, although it has been emphasized in medical curricula reform. Content, format, and accuracy vary as there are few evidence-based guidelines. Student preferences have not been thoroughly evaluated to identify effective online learning module features and characteristics. The peritoneal cavity is a historically difficult area for students to grasp.

Aim: To assess the educational value of two types of online resource presentation, integrated vs. discipline-based, in modules containing embryology, histology, and gross anatomy of the peritoneal cavity.

Methods

Learning Resource Development:

Figure 2: Example of Module Content Organization

A. Control Module
B. Experimental Module

Figure 3: Interactive learning tools on both modules

Qualitative Results

Thematic Analysis of Survey Comments:

- Both groups indicated interactive tools (the highlight and images) were positive aspects of module while the lack of video is a shortcoming (Table 1).
- Two groups differently identified other interactive features as negative (Table 1)

Table 1: Participant comments regarding module features

<table>
<thead>
<tr>
<th>Positive Feature</th>
<th>Negative Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Highlight, Images, Hover</td>
</tr>
<tr>
<td>Prequiz</td>
<td>Bullets, Slider, Lack of video</td>
</tr>
<tr>
<td>Integrated Module</td>
<td>Highlight, Interactive, Images</td>
</tr>
<tr>
<td>Postquiz/survey</td>
<td>Highlight, Hover, Lack of video, Not enough labels</td>
</tr>
</tbody>
</table>

Quantitative Results

Experimental Design:

Comparison of postquiz scores was performed with Wilcoxon signed-rank test. Both groups indicated interactive tools (the highlight and images) were positive aspects of module while the lack of video is a shortcoming (Table 1).

Table 2: Most frequently mentioned interface tools identified in survey comments

| Figure 8: Word Map of Participant Comments |

Conclusions

- Interactive online learning modules can lead to measurable learning outcomes regardless of the content being integrated.
- While all participants reported the modules supported their learning, slightly more experimental group members reported the integrated module’s value to be higher for anatomy and embryology.
- Majority of participants indicated the online modules are inadequate replacements for class lectures.
- Participants in both groups highly valued some in-module interactive features.
- Differences in negative comments suggest that order of content presentation may influence the effectiveness of certain in-module interactive features.

References


Acknowledgements

Thank you to the Modern Human Anatomy Program, Special thanks to Dr. Keltay Orr, Susan Githens, Angelique Daniels, Andrew Cale, Daniel Heck, MSMHA Class of 2018, MSMHA Class of 2019, CU SOM Class of 2021, CU Dental School Class of 2021, Colorado State Anatomical Board and the donors.