

**iPad Technology Implementation in a
Medical Gross Anatomy Laboratory:
A Quality Improvement Pilot Study**

**2nd Annual BSOM Medical Education Day
April 20, 2016**

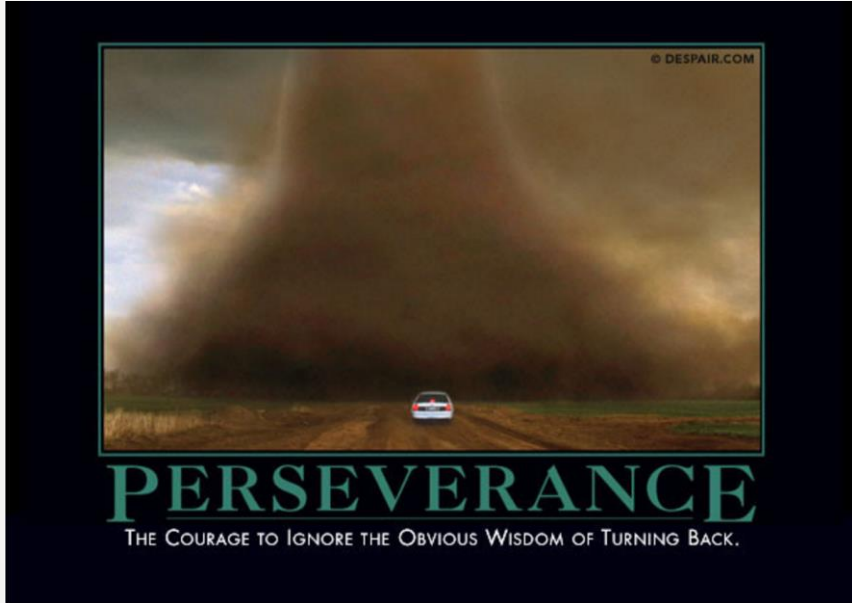
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Acknowledgement and the Team

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- Office of Medical Education
- Zach Frabitore, MS2
- Shelby Powers, MS2
- Jim Eubanks, MS2
- Jack Williams, MS2
- Wooten Jones, MS2



Background



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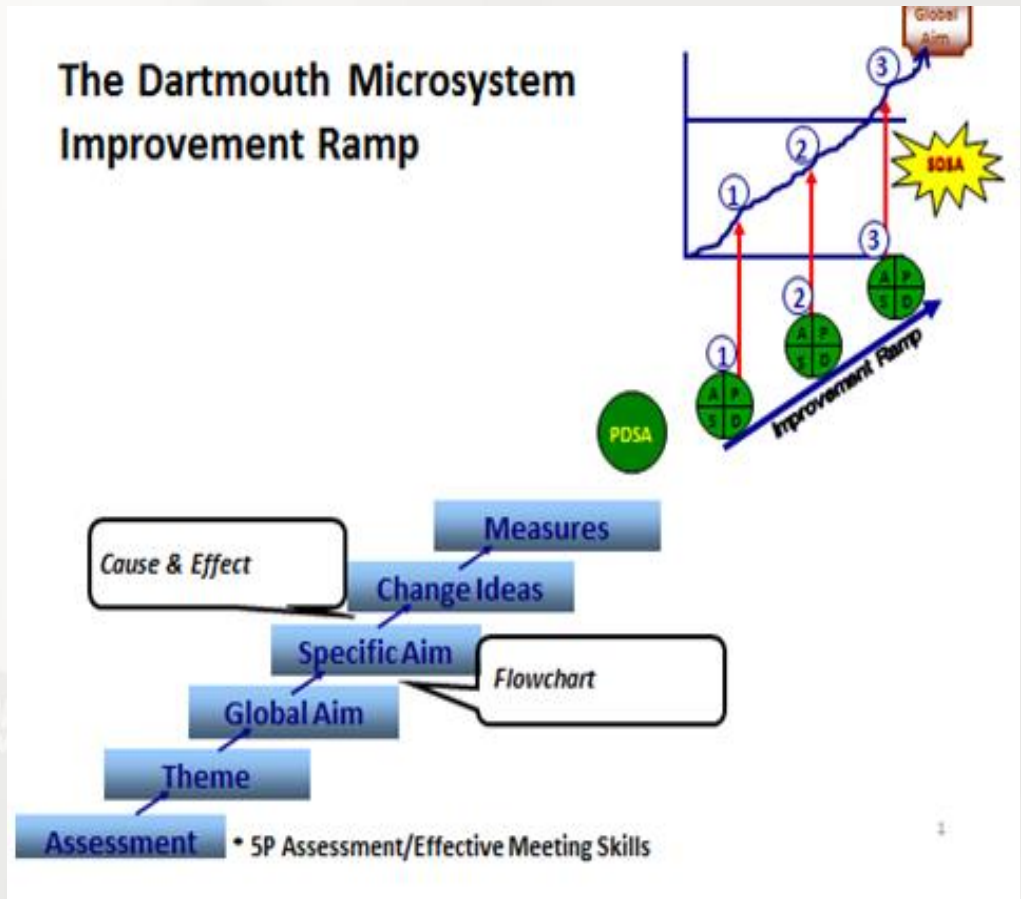


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How?



The Dartmouth Microsystem Improvement Ramp



[source](#)



Assessment (5 P's)

Plan – P
Do – D
Study – S
Act – A

- Purpose: Improve learning environment and achieve the best possible student satisfaction.
- Patients (students): First year BSOM medical students.
- Professionals: MD, PhD, PA, PT, DMD, CRNA
- Processes: Dissection quality/efficiency, accessibility of information, faculty availability and requirement for student assistance.
- Patterns: student satisfaction, preferences, and academic impact.



Aim

Plan – P
Do – D
Study – S
Act – A

- **Global:** We aim to catalyze effective learning in the Gross Anatomy lab at the Brody School of Medicine. The process begins with iPad introduction along with beneficial applications and ends when the needs of medical students are met. By working on this process we expect to facilitate a more efficient and valuable learning experience and increase medical student satisfaction. It is important to work on this now because we need a better educational environment in the lab.
- **Specific:** Develop a more effective and efficient learning environment in the Gross Anatomy lab to increase medical student satisfaction by introducing iPad tablets equipped with beneficial applications by the end of the Fall semester of 2015.

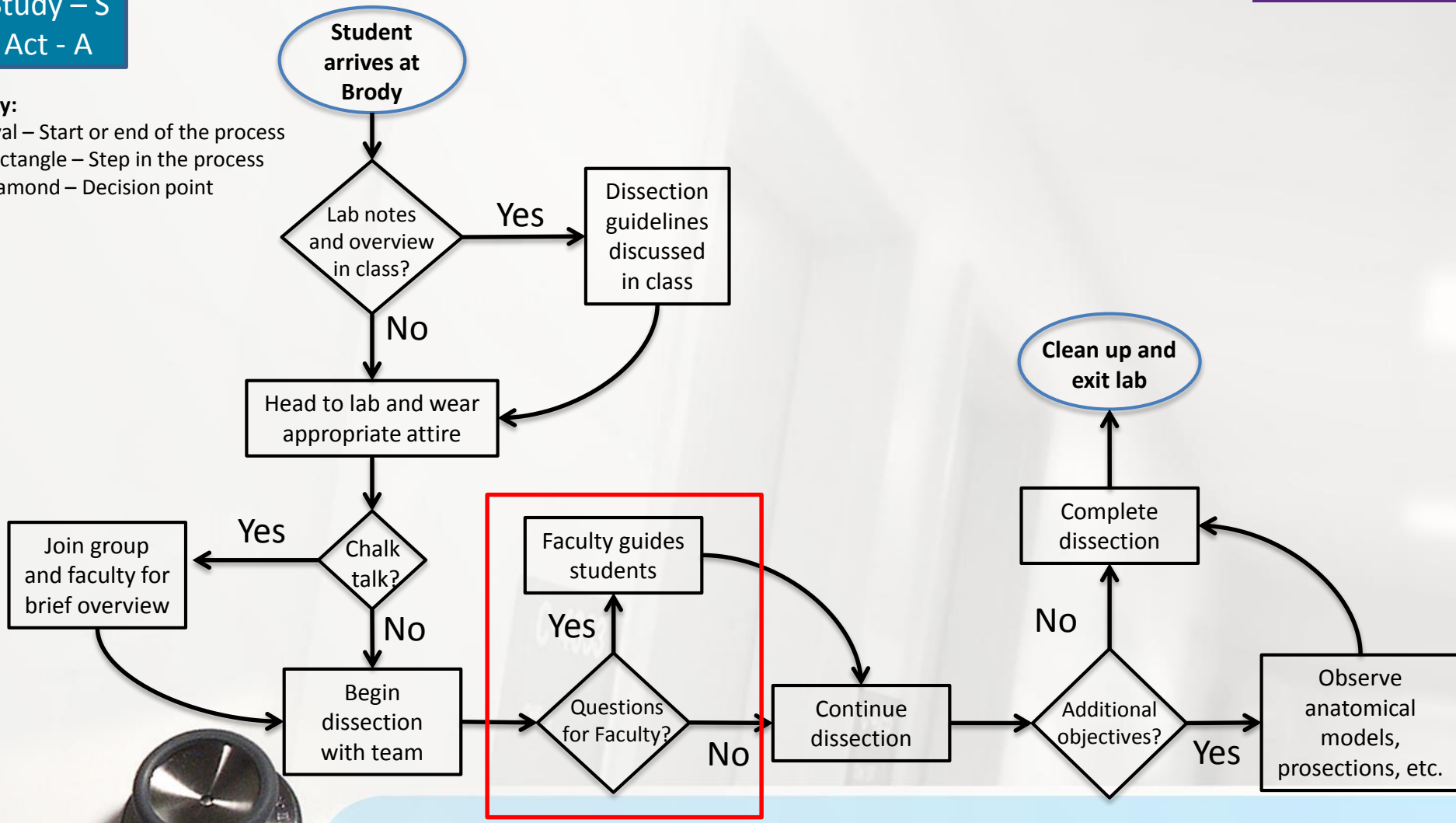
SMART



Flow Chart

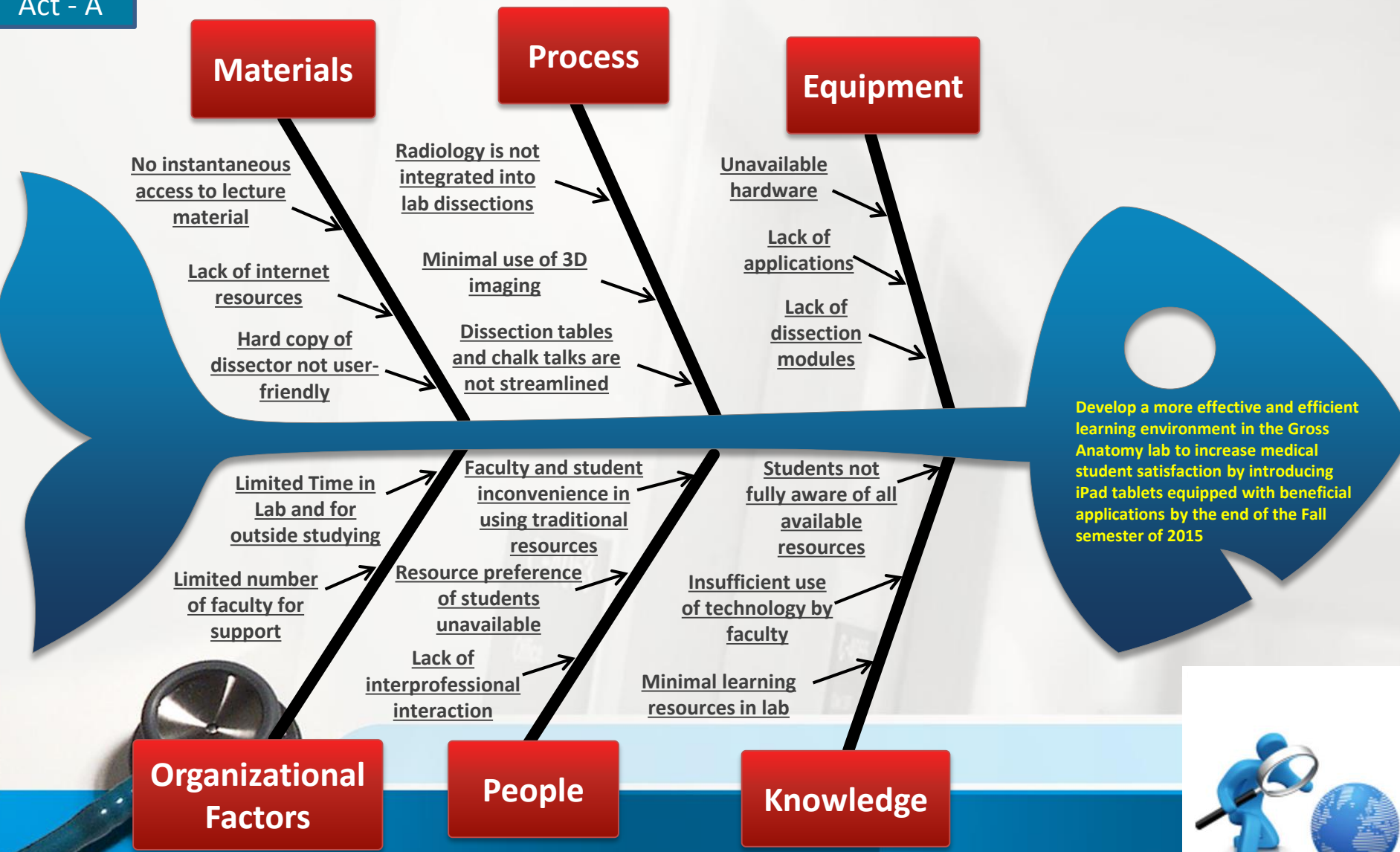
Plan – P
Do – D
Study – S
Act - A

Key:
Oval – Start or end of the process
Rectangle – Step in the process
Diamond – Decision point



Cause and Effect (Fishbone) Diagram

Plan – P
Do – D
Study – S
Act – A



Implementation

- Internet-accessible iPad Air 2[®] tablets
- Online dissector
- Essential Anatomy 5 application
- Abundant resources
- Ease/comfort of use



[source](#)

Pilot Study: Introduction

Plan – P
Do – D
Study – S
Act – A

- Purpose: Characterize the impact of iPad implementation on student perceptions of learning in a first-year Medical Gross Anatomy and Embryology course.
- Hypothesis: The implementation of iPads with reference applications would improve student perceptions of learning and faculty availability during laboratory sessions.

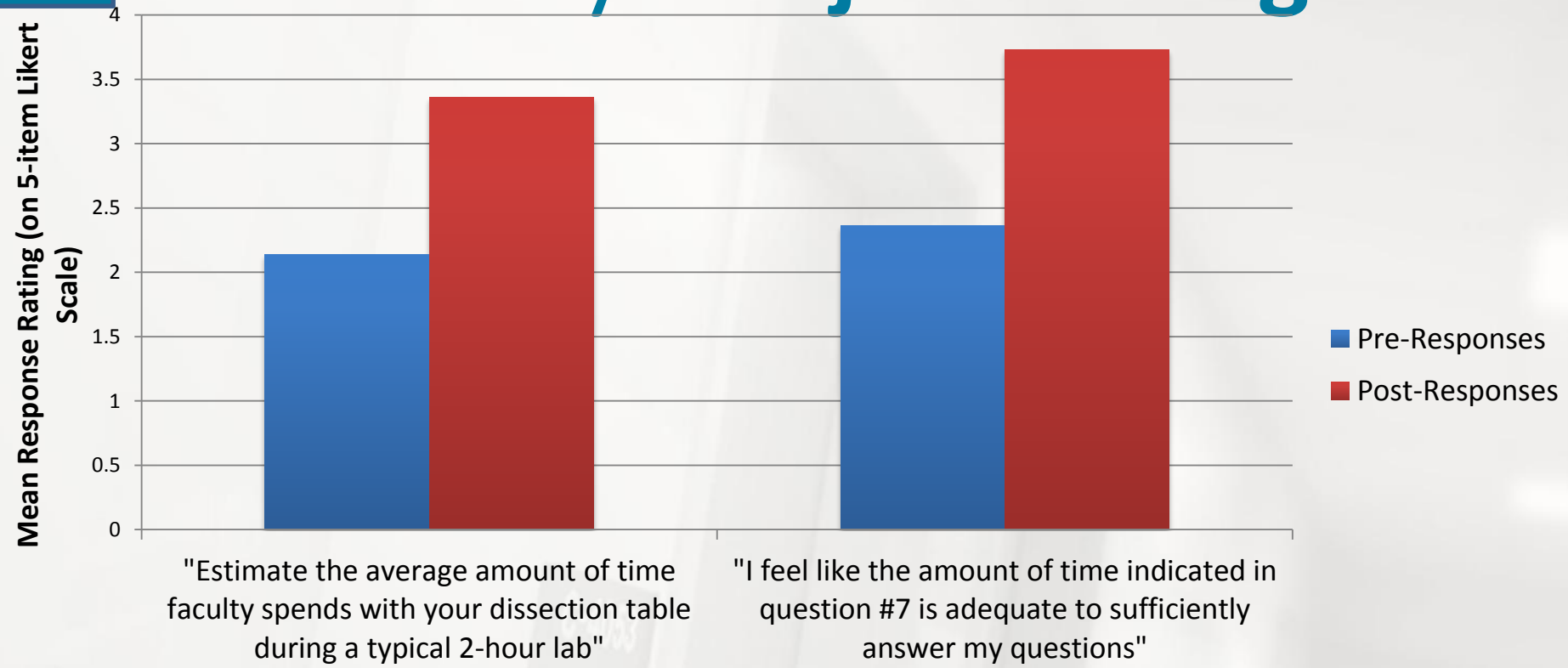


Pilot Study: Methods

- A voluntary 20-item, pre-implementation questionnaire was completed by students (n=84).
 - Students rated levels of agreement to statements regarding the lab component of the course.
- iPads distributed during the 2nd half of the course.
- Post-implementation questionnaire completed by students (n=70) after course concluded, again asked to rate levels of agreement over same statements.



Pilot Study: Major Findings



Survey Questions that demonstrated significant different between pre- & post- questionnaires



Pilot Study: Major Findings

- Significant difference in **Student's perception of time of faculty availability during scheduled dissection time** before (M= 2.1, SD = 0.10) and after (M= 2.4, SD = 0.09) implementation; $t(69) = 2.93, p = 0.005$.
- Significant difference in **Student's rating of if that time of faculty assistance was sufficient** before (M = 3.4, SD = 0.14) and after (M = 3.7, SD = 1.09) implementation; $t(69) = 3.08, p = 0.003$.



Pilot Study: Significance & Future Direction

Plan – P
Do – D
Study – S
Act – A

- Findings suggest iPad implementation resulted in a significant increase in student perception of faculty availability and student satisfaction during the lab component of the course.
- Future studies
 - Student and Faculty satisfaction
 - Academic impact of iPad use.
 - Effect of additional applications.



References

- Dartmouth Instituted For Health Policy and Clinical Practice: (2010). www.clinicalmicrosystem.org
- Gabard DL, Lowe DL, Chang JW. Current and future instructional methods and influencing factors in anatomy instruction in physical therapy and medical schools in the U.S. *Journal of Allied Health*.2012;41(2):53–62.



QUESTIONS???

