

TECHNOLOGY: WHAT IS
USED AND HOW IT'S USED
BY MEDICAL STUDENTS
STEPHEN "ZACH" FRABITORE

2nd Annual REACH
Medical Education Day
April 20, 2016

TEAM MEMBERS

- Taj Nasser, MS2
- Dr. Elizabeth Baxley, MD
- Dr. Robert Carroll, PhD
- Kody Pratson, MS2

THE STATE OF MED STUDENT GUNMANSHIP

- Why students use mobile learning:
 - Instant access to information
 - Low cost (tablet vs. textbooks)
 - Situational and contextual learning in situ
 - Continuous communication between learners and tutors
 - Self-assessment and institutional assessment
- E-learning is increasingly being made specifically for mobile devices in lieu of computers
- “Mobile learning” is just learning

Mobile Learning in Medical Education: Review.

Walsh K.

Ethiop J Health Sci. 2015 Oct;25(4):363-6. **Review.**

BUT DON'T JUST TAKE MY WORD FOR IT...

- Anytime mobile access to **lectures significantly increases performance** on MCQ tests over traditional studying
 - Kalludi S et al, 2015
- 3rd year medical students experience **measurable increases in clinical decision making** ability IF experienced in the technology
 - Nuss MA et al, 2014
- EM and IM residents increase medical use of smartphones over time, **most receive no prior training**
 - Raaum SE et al, 2015
- FM residency program **found iPad should be integrated into curricula and education** on use should be provided
 - Archibald D et al, 2014

BUT WHAT ABOUT BRODY?

- Technology use in medical education and clinical medicine is on the rise at all levels
 - *Are these trends reflected by Brody students?*
 - *Is there an opportunity to expand technology access and education at Brody?*
 - *Is there an opportunity to better train students as clinical decision makers?*
 - *Is there an opportunity to better prepare Brody students for today's residency programs?*

METHODS

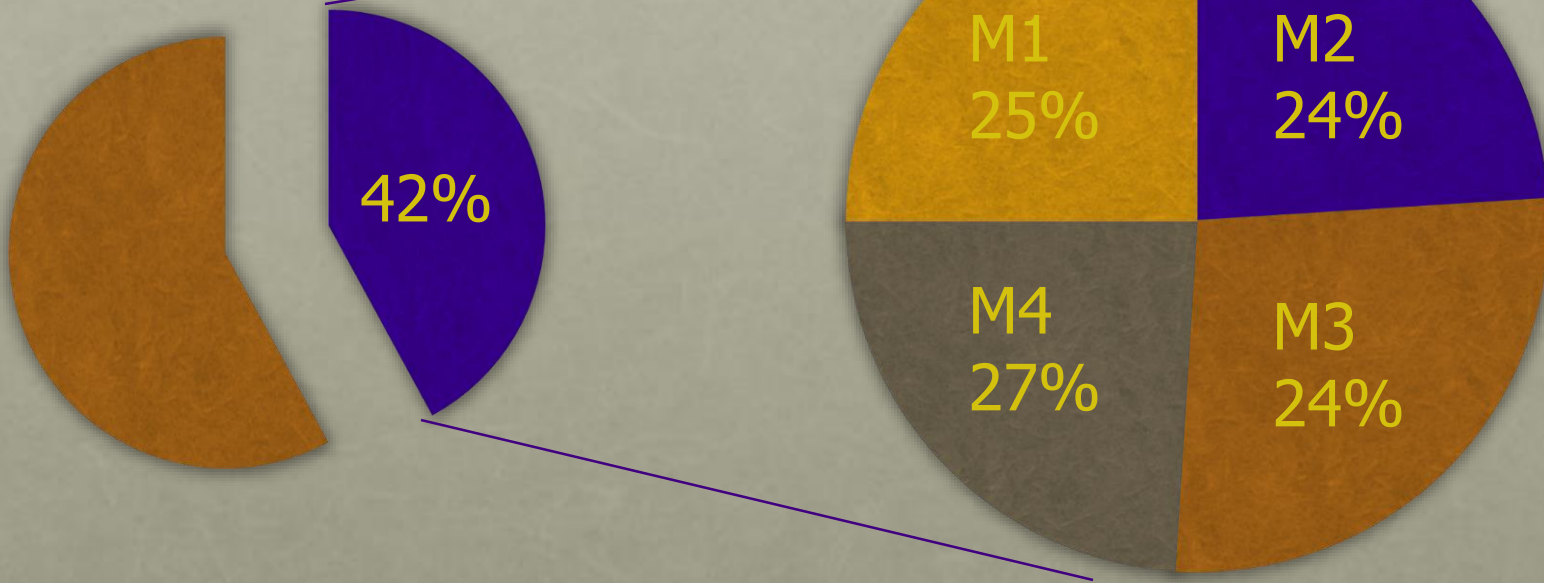
SurveyMonkey® was used to send a 5 question survey to the current M1-M4 Brody student body (309 Students)

- 3 Multiple Choice Questions – What is Used
 - *What year are you?*
 - *What technology do you use in the Classroom Setting?*
 - *What technology do you use in the Clinical Setting?*
- 2 Free Response Questions – How it's Used
 - *What programs / apps do you use?*
 - *How do you use these programs / apps to supplement your learning?*

RESPONSES

Total Respondents by Class

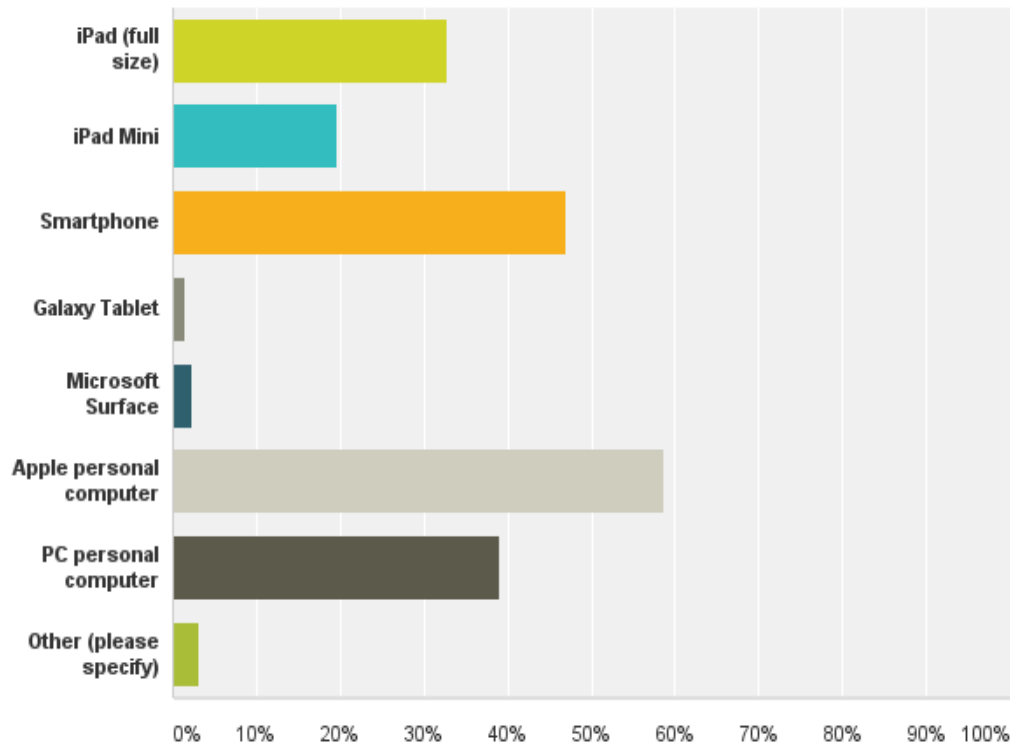
Total BSOM Student Body



QUESTION 2: WHAT'S IN YOUR BACKPACK?

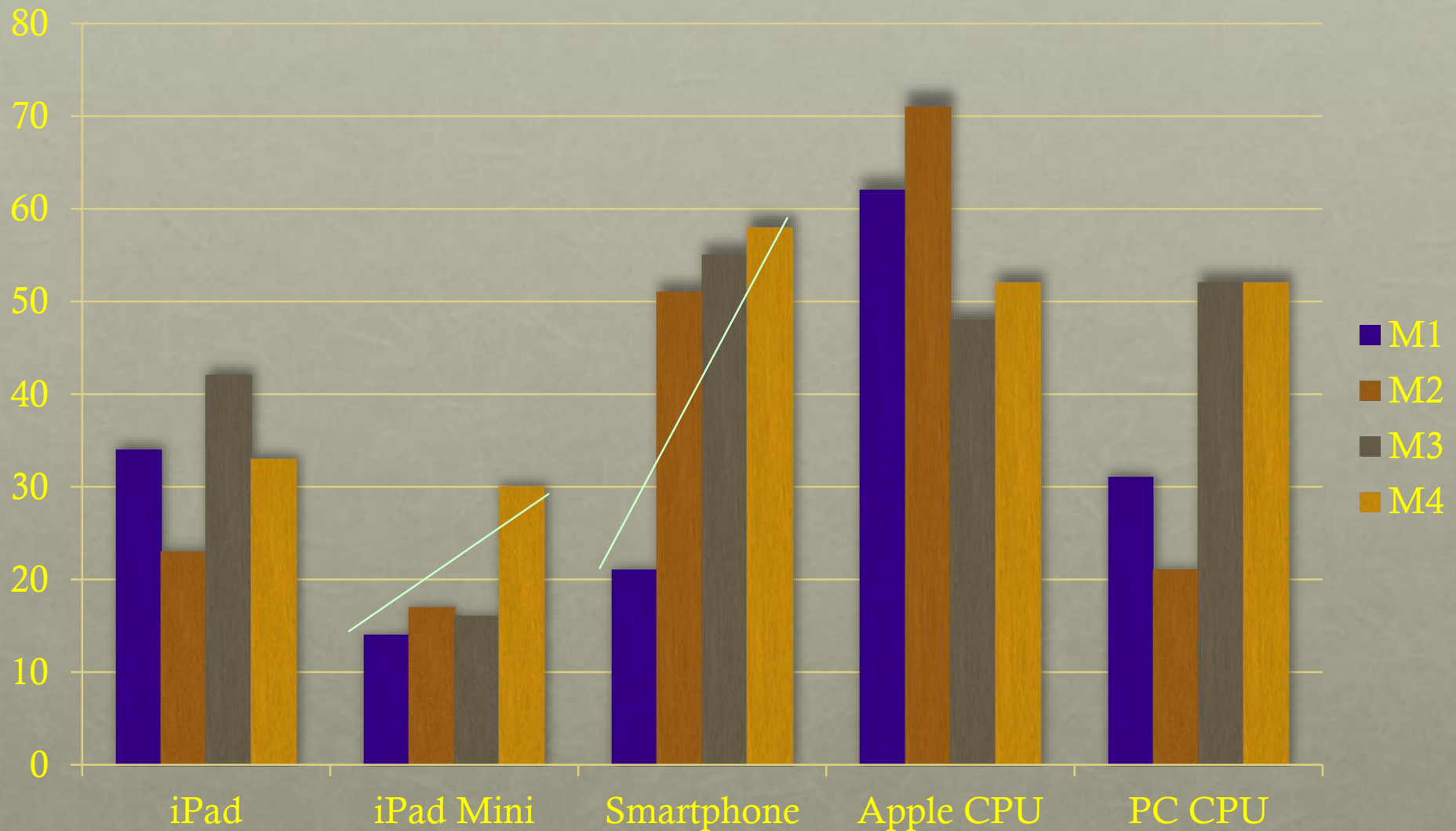
Q2 Please select all technology adjuncts you use(d) in the CLASSROOM setting

Answered: 128 Skipped: 2



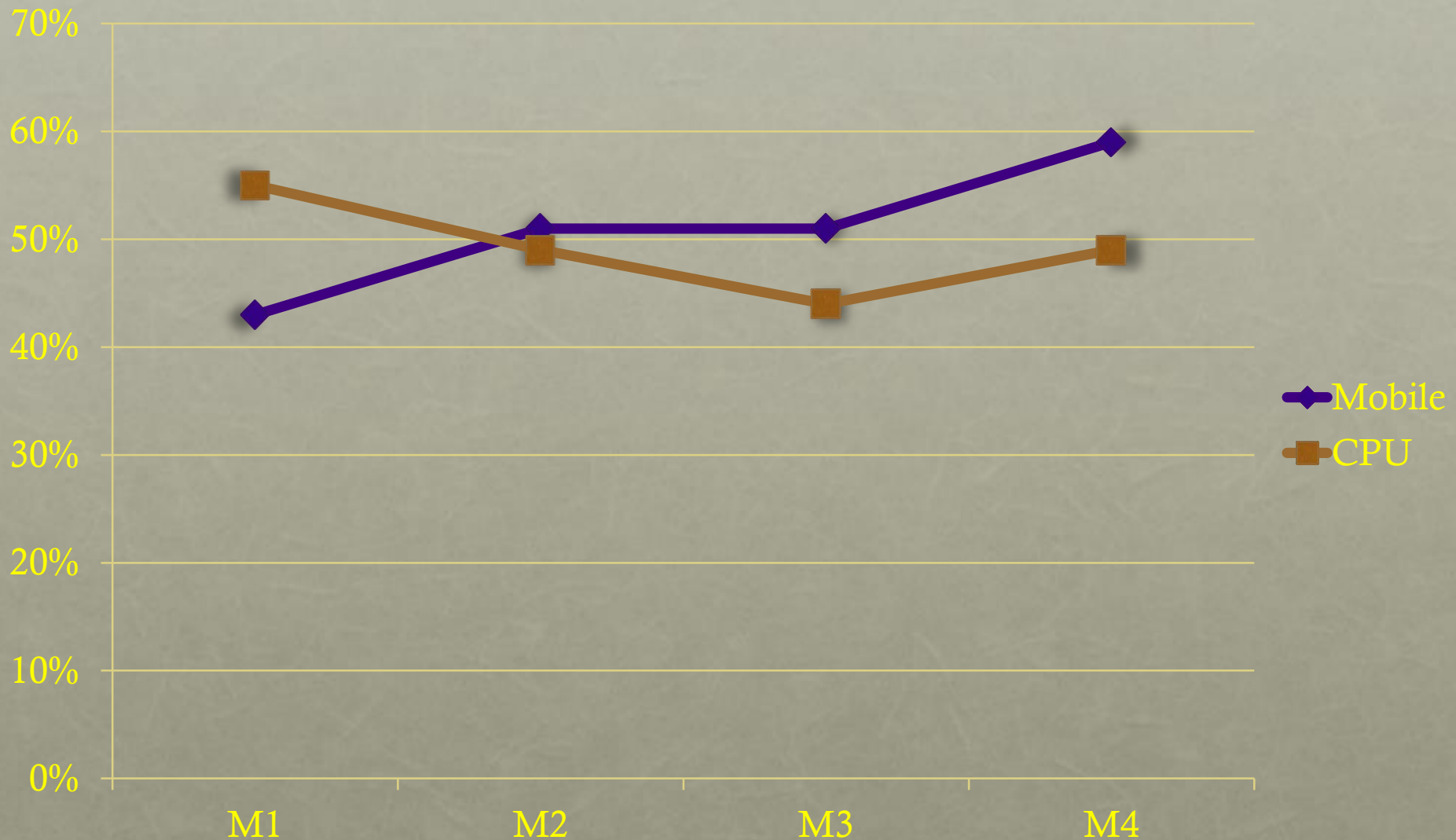
- **98% Laptop**
 - 59% MacBook
 - 39% PC
- **61% Tablet**
 - 33% iPad
 - 20% Mini
- **47% Smartphone**

ADJUNCT TRENDS IN THE CLASSROOM



MOBILE LEARNING OVER TIME

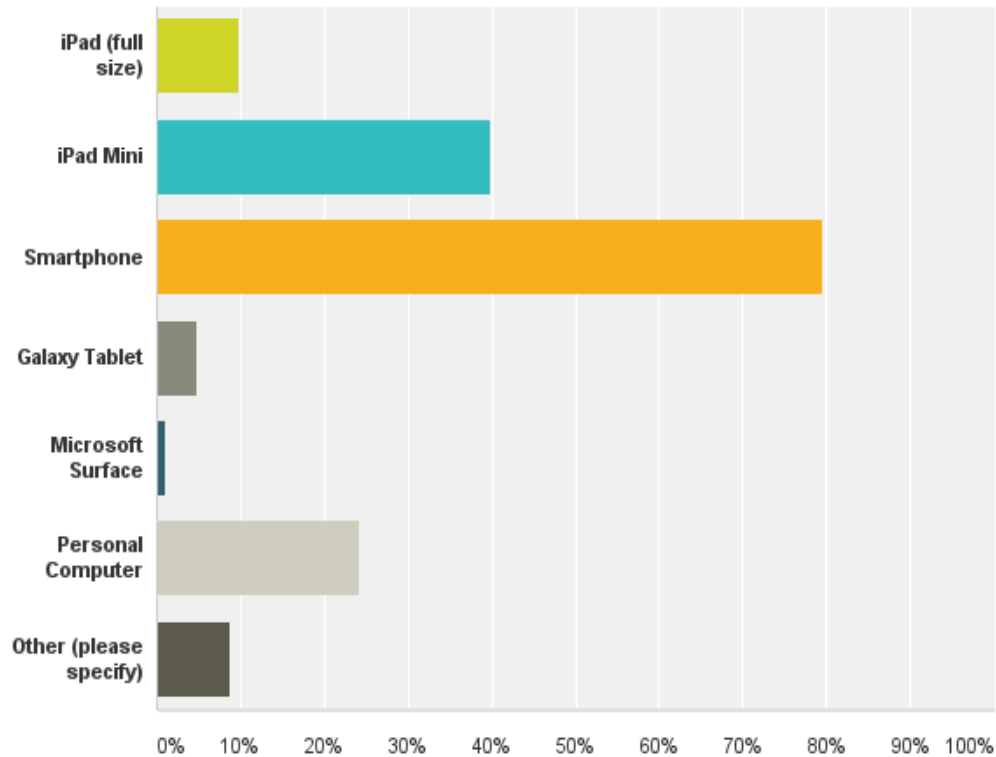
- CLASSROOM -



QUESTION 3: WHAT'S IN YOUR WHITE COAT?

Q3 Please select all technology adjuncts you use in the CLINICAL setting

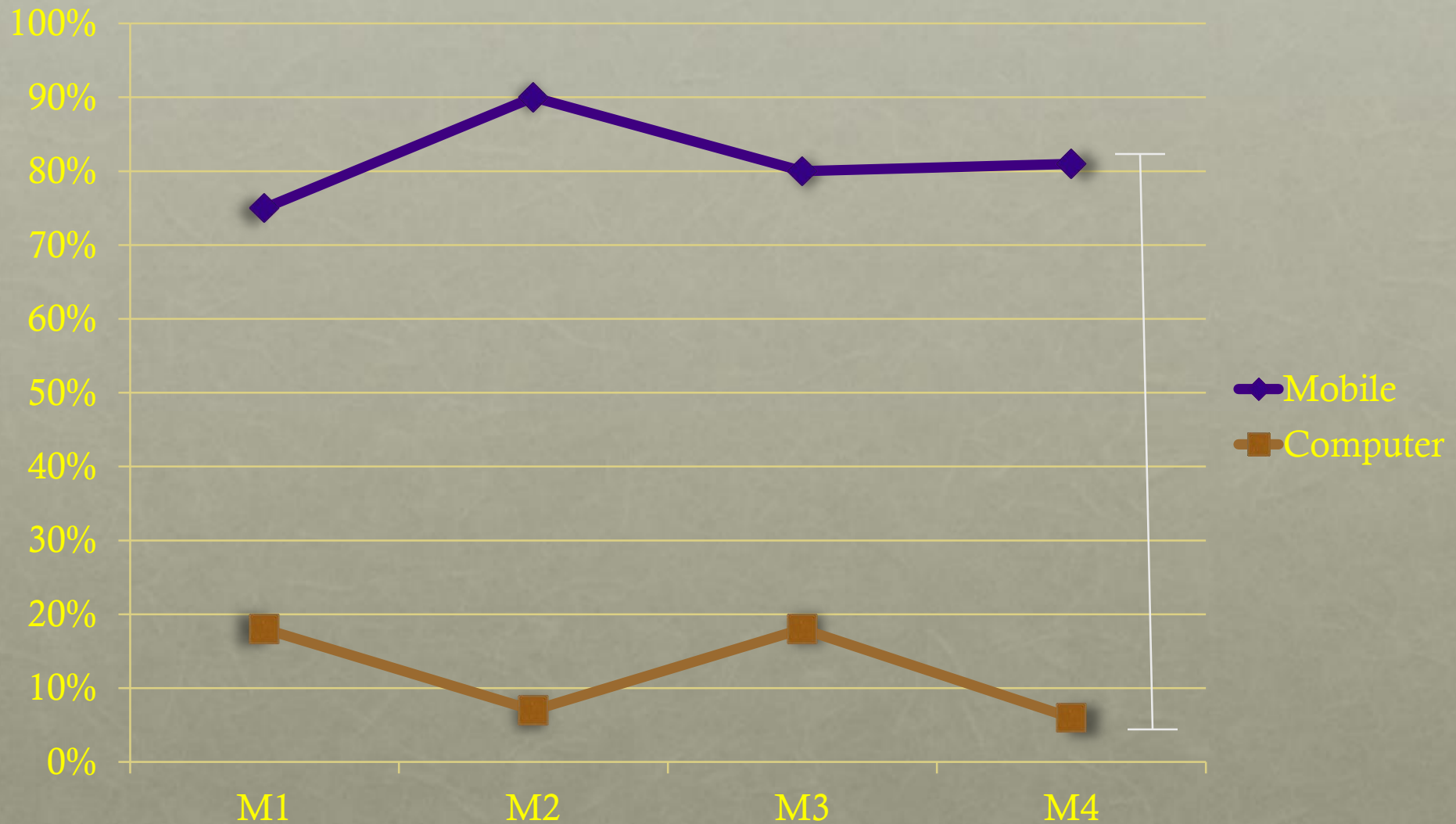
Answered: 103 Skipped: 27



- 24% Laptop
- 50% iPad
 - 40% Mini
- 80% Smartphone

MOBILE LEARNING OVER TIME

- CLINIC -



TALK TRENDY TO ME

- **CLASSROOM**

- *Apple Laptop (59%)*
- *iPad Tablet (53%)*

- **CLINIC**

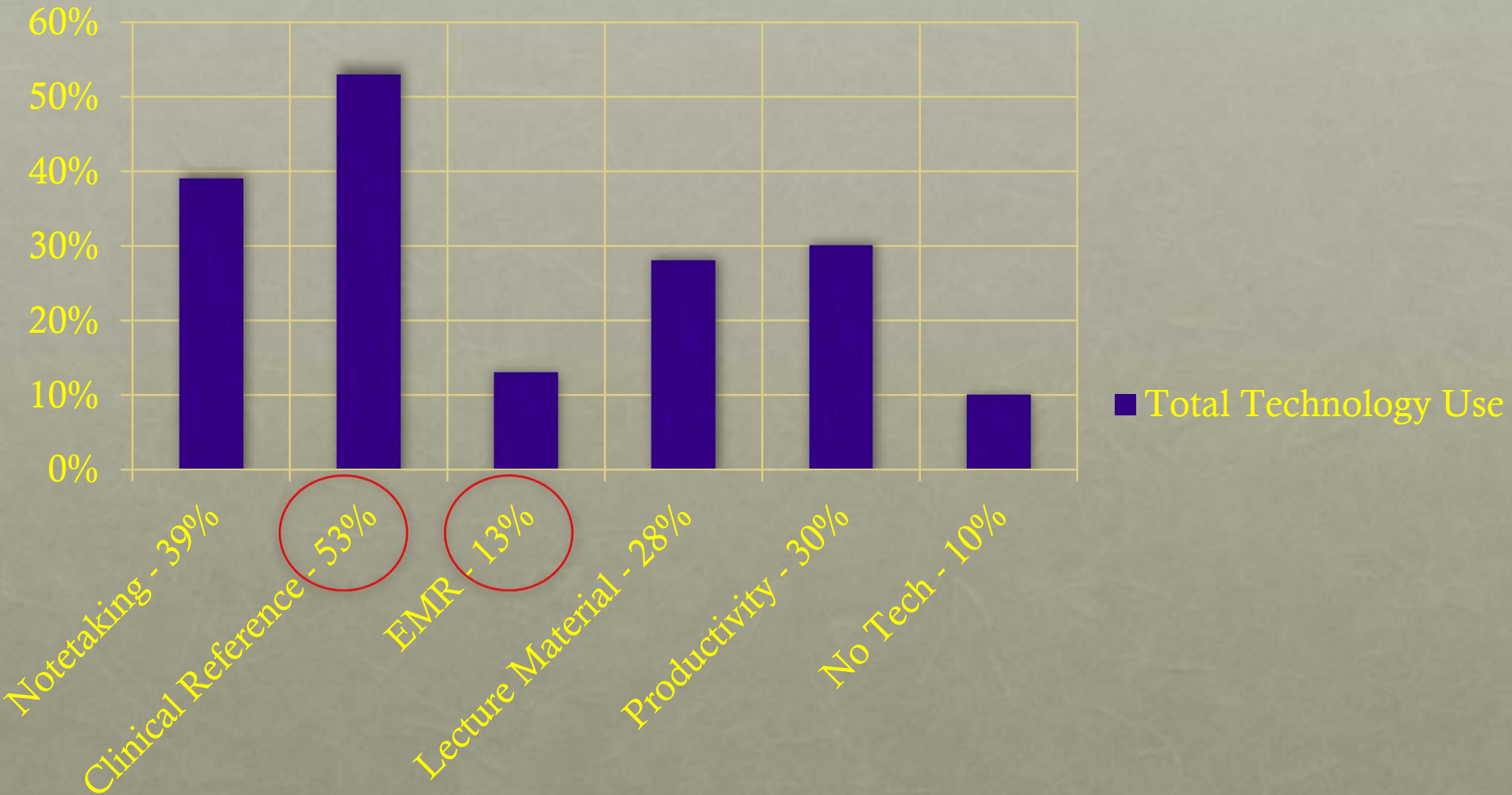
- *Smartphone (80%)*
- *iPad Tablet (50%)*

- When all responses combined and compared to respondents

- **52%** of classroom technology use is mobile (handheld)
- **85%** of clinical technology use is mobile (handheld)

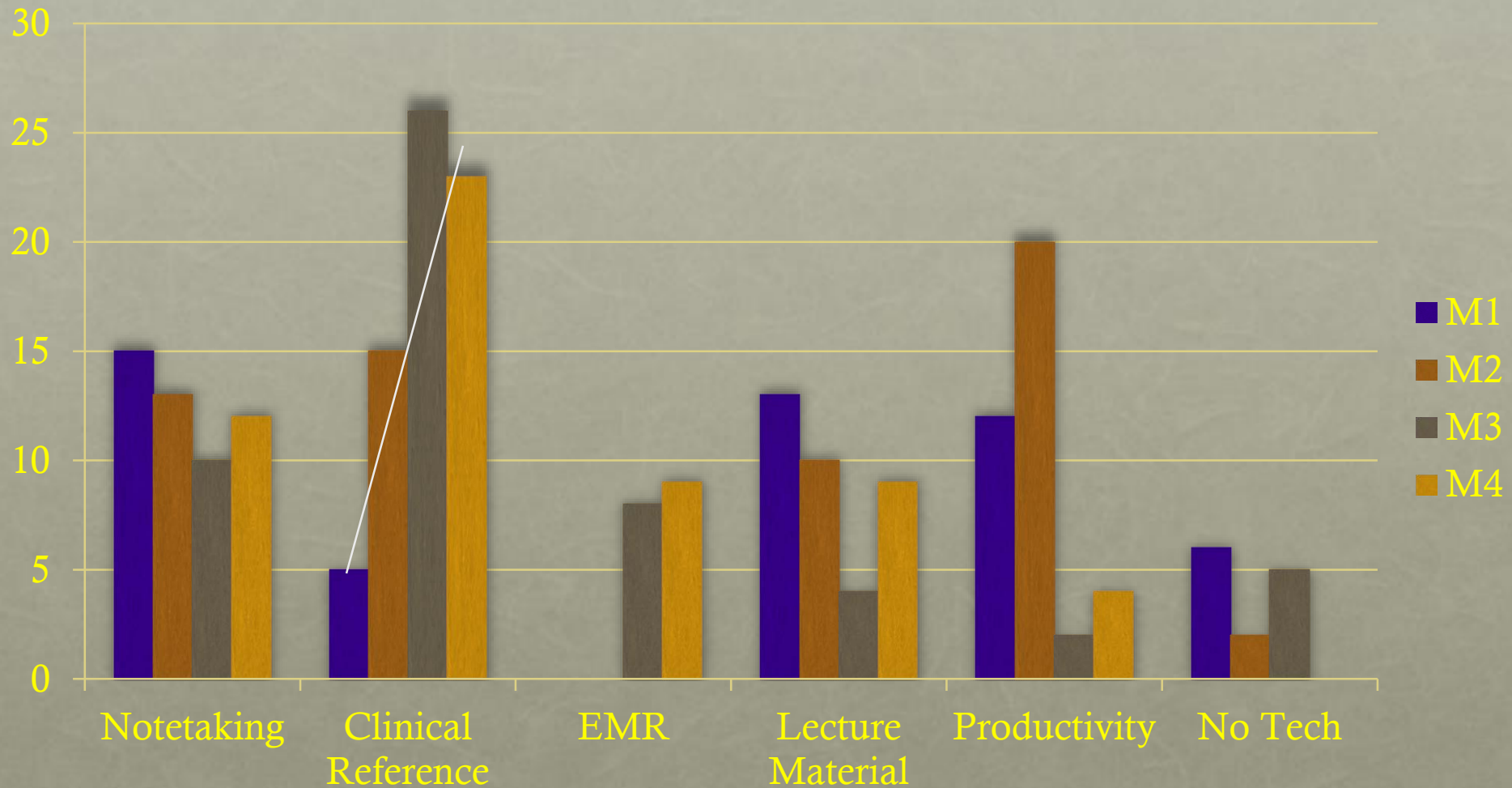
QUESTIONS 4 & 5: USE

Total Technology Usage



USE ACROSS CLASSES

Usage by Class



TOP PROGRAMS

- 1.) UpToDate (47%)
- 2.) ePocrates (41%)

PROGRAMS BY CLASS

- M1s
 - 1.) Microsoft Office (73%)
 - 2.) UpToDate (35%)
 - 3.) Anki/Essential Anatomy (31%)
- M2s
 - 1.) UpToDate/Essential Anatomy/Anki (40%)
 - 2.) Microsoft Office (27%)
 - 3.) USMLE Qbank (17%)
- M3s
 - 1.) UpToDate (53%)
 - 2.) ePocrates (50%)
 - 3.) EMR/MedScape/Search Engine (29%)
- M4s
 - 1.) ePocrates (78%)
 - 2.) UpToDate (56%)
 - 3.) MedScape (41%)

NATIONAL TRENDS

- Extensive mixed methods study on third-year iPad use:
 - Top 5 Apps
 - EMR ← Not Met
 - ePocrates
 - PDF Expert
 - VisualDx
 - Micromedex
 - 71% of third-year medical students use iPad and expertise grew with time ← 89%

CONCLUSIONS

- **Over 50% of students are using handheld technology**
 - **With upward trend across years**
- **Clinical reference is consistently a major use, even in the preclinical years**
 - **With upward trend across years**
- **Brody is mirroring national trends**
- **Push for curricular incorporation applies**

POSSIBLE CONSIDERATIONS

- Access to this technology
 - *Pre-loaded curriculum on an tablet presented with white coat*
- Inclusions of these adjuncts in both the preclinical and clinical curriculum
 - *Anatomy – already happening*
 - *Foundations*
 - *OSCE+PBL*
 - *Preceptorship*
 - *Clinical Years*
 - *Residency and beyond*

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