

EVMS

Eastern Virginia Medical School

PHYSICIAN ASSISTANT PROGRAM

NOTE TAKING in the DIGITAL age...

THERE'S AN APP FOR THAT!!

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Teaching. Discovering. Caring™

INTRO & DISCLOSURE

- **This is me...**
- **I have no financial disclosure to make**
- **I receive no compensation from the pharmaceutical or medical product industry**
- **I receive no compensation from any other industry/corporation discussed in this lecture**
- **I absolutely love technology...**

OBJECTIVES

- ❑ **Overview of note taking through the years**
- ❑ **Articulate the best practices related to student note taking**
- ❑ **Compare & contrast the needs of professors and students related to lecture content delivery**
- ❑ **Appreciate the rapid infiltration of technology in education**
- ❑ **Digital Note Taking Options**



NOTE TAKING THROUGH HISTORY



NOTE TAKING BEST
PRACTICES

The PROCESS



Listening



Transcribing



Organizing



...with haste

Research on Student Notetaking

DeZure, Kaplan, Deerman (2001)



- “Staple activity...taken for granted”
- Students who record & review notes:
 - Recall more material
 - Higher test scores
 - Immediate & Delayed
 - Recall & Synthesis
 - Direct relationship
 - Better when reviewed before exam
 - Even when ***not present*** at lecture!!!



Research on Student Notetaking

DeZure, Kaplan, Deerman (2001) – CONT.

□ PROBLEMS

- 40% of important points missed
 - Improved as education advances
 - More recently: 90% main ideas | 11% supporting ones
- Visual recorded > Verbal
 - However they are more inaccurate
 - Diagrams, Figures, Equations, etc.

Research on Student Notetaking

DeZure, Kaplan, Deerman (2001) – CONT.



□ FACULTY FACILITATION

□ Lecture Delivery

□ Pacing

- Dependent on amount and difficulty of information
- 135 words / minute

□ Pausing

- 2-3 minutes for review and reworking of notes
- Free recall at the end of lecture

□ Verbal & Visual Cues

- Lecture overview/objectives
- Signal transition points

Research on Student Notetaking

DeZure, Kaplan, Deerman (2001) – CONT.



□ FACULTY FACILITATION – CONT.

□ Handouts

- Provide a “scaffold”

- Outline

 - Headings & Subheadings w/ space for notes

 - More complete notes and better performance

- Graphic Organizer

 - Tables, Matrixes, Diagrams

- Instructor’s Notes

 - Should supplement student’s notes

 - Distribute after lecture

Notetaking Best Practices

□ BEFORE CLASS

- Skim material in advance
- Organize logically
- Engage fully

□ DURING CLASS

- Listen for structure, questions, & repetition
- Be complete & accurate
- Keep up: abbreviate, symbols, leave space

Notetaking Best Practices

□ AFTER CLASS

- Review within 24 hours
 - Locate gaps or confusion
 - Check accuracy
 - Write questions
- Reorganize
 - Concept mapping, outline, chart
 - Colors
 - Summarize

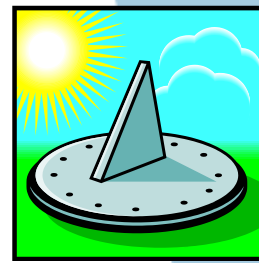
Cornell Notetaking System

Cue Column	Notetaking Column
2.5"	6"
	Record Notes
	<u>PROCESS:</u> <ul style="list-style-type: none">- Review w/in 24 hours- Write questions based on notes and summarize in cue column- Cover notes and recite aloud the information you remember- Reflect on material's significance, principles, application, synthesization, etc.
SUMMARY SECTION	
2" at bottom of each page to summarize notes	



RISE OF TECHNOLOGY

My, how times change...



	2000	2010
Active Blogs	12,000	141 MILLION
Daily Google Searches	100 MILLION	2 BILLION
Books Published	282,242	1,052,803
Daily Letters Mailed	207.88 BILLION	175.67 BILLION
Daily E-mails	12 BILLION	247 BILLION
Text Messages	400,000	4.5 BILLION
Hard Drive Storage	\$10 / GB	\$0.06 / GB
Time Online	2.7 hrs. / wk.	10 hrs. / wk.
iTunes Downloads	0	10 BILLION

CHOOSE WISELY



It is not what technology does to us, it is what we do to technology. Get smart with technology, choose wisely and use it in a way that benefits both you and those around you.

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RESEARCH ON COMPUTERS

Zhu (2011). Center for Research on Learning & Teaching



- **Survey of UG & Grad students @ UofM**
 - 16 courses that allowed laptops
 - 8 w/ LT & 8 w/o LT

 - Classes matched for size, level, & discipline

 - 595 respondents (35% response rate)
 - 259 w/ LT
 - 336 w/o LT

RESEARCH ON COMPUTERS

Zhu (2011). Center for Research on Learning & Teaching



POSITIVE

- More questions
- Slightly higher grades*
- Better student learning*

NEGATIVE

- Distraction
- Negative association with final grades

*Only when the integration of technology received “significant attention” from the faculty.

RESEARCH ON COMPUTERS

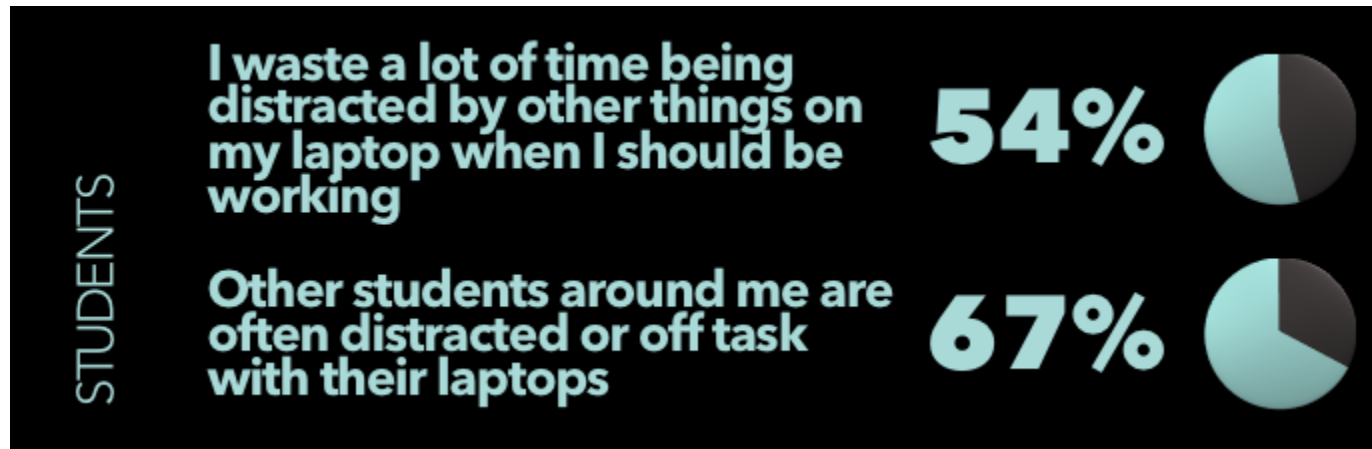
Zhu (2011). Center for Research on Learning & Teaching



- **Open ended comments:**
 - More efficient when typing
 - Notes more organized

COMPUTER CONCERNS

DISTRACTION



RESEARCH ON COMPUTERS

Zhu (2011). Center for Research on Learning & Teaching



□ What about Distractions?

- 75% of students report laptops increased the amount of time spent on non-course tasks
- 35% spent > 10 minutes/class on social networking sites & e-mail
- 40%+ “somewhat” or “significantly” distracted by those who are using laptops nearby

RESEARCH ON COMPUTERS

Zhu (2011). Center for Research on Learning & Teaching



□ Suggestions

- Set a policy and communicate it to students
 - Institutional vs Programatic vs Course specific
 - Hybrid vs All-or-Nothing
- Have a laptop-free zone
- Anticipate logistical issues
 - Power
 - Furniture configuration
 - Adaptor connections
 - Bandwidth

DIGITAL NOTE TAKING

NOTE TAKING OPTIONS

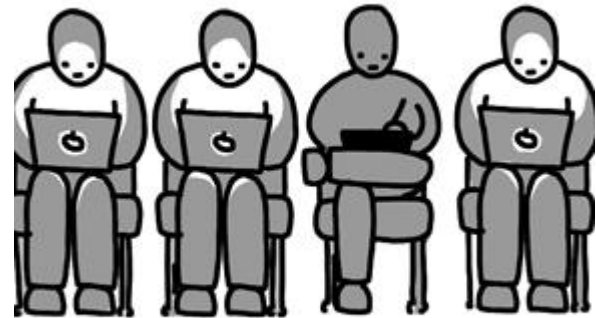
PEN & PAPER

□ Advantages

- Cheap
- Engages the mind
- Customizable
- Limited distractions

□ Disadvantages

- Writer's cramp
- Miss visual cues
- Can't get it all



NOTE TAKING OPTIONS (CONT.)

MS POWERPOINT

□ Advantages

- Exactly what is on screen
- Customizable
- Familiar

□ Disadvantages

- Keyboarding
- Cannibalize-able
- Limited note editing options
- Organization limitations
- No element of surprise



NOTE TAKING OPTIONS (CONT.)

MS WORD

□ Advantages

- Familiar
- Editing options
- Digital Cornell system

□ Disadvantages

- Keyboarding
- Organizational limitations



NOTE TAKING OPTIONS (CONT.)

MS ONENOTE

□ Advantages

- Customizable
- Inherent organization
- “One-stop shop”
- Lots of editing features
- Cross-device program
- Quick search

□ Disadvantages

- Keyboarding
- Overwhelming at first
- Not as intuitive
- MS limitations



NOTE TAKING OPTIONS (CONT.)

MS ONENOTE | Tablet

□ Advantages

- Connectivity w/ PC
- Inherent organization and customization

□ Disadvantages



NOTE TAKING OPTIONS (CONT.)

NOTABILITY | Tablet

□ Advantages



□ Disadvantages

- No PC counterpart but...
- Learning curve?



NOTE TAKING OPTIONS (CONT.)

EVERNOTE | Tablet/Web

- Advantages



- Disadvantages



LECTURE CONTENT DELIVERY

DELIVERING CONTENT: Who Needs What?

PROFESSORS

- **Communicate critical information**
- **Maintain attention**
 - Anticipation
 - Timely reveal
- **Copyright protection**

STUDENTS

- **Receive critical information**
- **Organization of material**
- **Manipulate & Annotate**
- **Personalize**
- **Edu-tained**

LECTURE DISTRIBUTION

NATIVE POWERPOINT

- **Advantages:**
 - Easy
- **Disadvantages**
 - Lecture IP
 - Notes or no notes??
 - Hiding slides/answers
 - No native ARS

ADOBE PDF

- **Advantages**
 - Simple step to create
 - Universal formatting
 - Some level of IP protection
- **Disadvantages**
 - Limited editing w/o Adobe Pro

LECTURE TOOLS



- **Began as a research project in 2005**
 - Goal: to make large intro courses seem smaller and less intimidating by engaging students via their laptop
 - “...improve communication, cultivate an environment for more active, participatory learning...”
- **Modified w/ both student & faculty feedback**
- **Commercially launched 2010**

LECTURE TOOLS (CONT.)

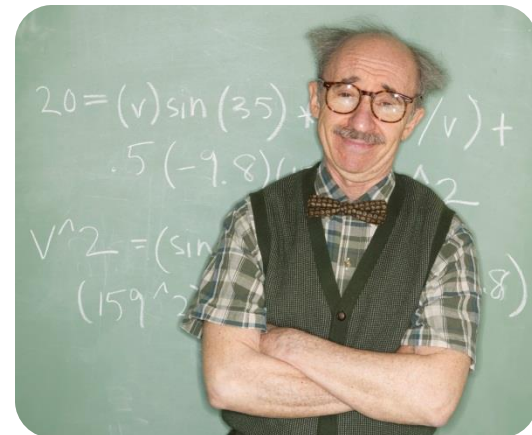
PROFESSOR VIEWPOINT

□ ADVANTAGES

- Integrated ARS
- Single-site login
- Anticipated reveal
- Attendance quiz
- Lecture Feedback
- Automatic grading
- Engaged students
- Lecture IP maintained

□ DISADVANTAGES

- No transitions/animations
- Difficult to modify single slide
- Not completely automated
- Young company (?)



LECTURE TOOLS (CONT.)

STUDENT VIEWPOINT

□ ADVANTAGES

- Single-site login
- Lecture Feedback
- Integrated note taking
- Editing tools
- “Eliminate the Fear to Participate”
- Mark slides as important or confusing
- Lifetime access
- Freedom of choice & no extra hardware

□ DISADVANTAGES

- Limited editing
- Limited export/printing fxns



VALIDATING RESEARCH

- **Deliberate Engagement of Laptops to Improve Attentiveness and Engagement – *Dr. P.J. Samson***
 - Explored the value of in-class internet technologies to improve attentiveness, engagement and learning
 - 90% voluntarily used the system
 - Laptops increased likelihood of engaging in tasks unrelated to course
 - LT helped improve attentiveness, more engaged, and learned more

RESEARCH ON LECTURE TOOLS

Zhu (2011). Center for Research on Learning & Teaching



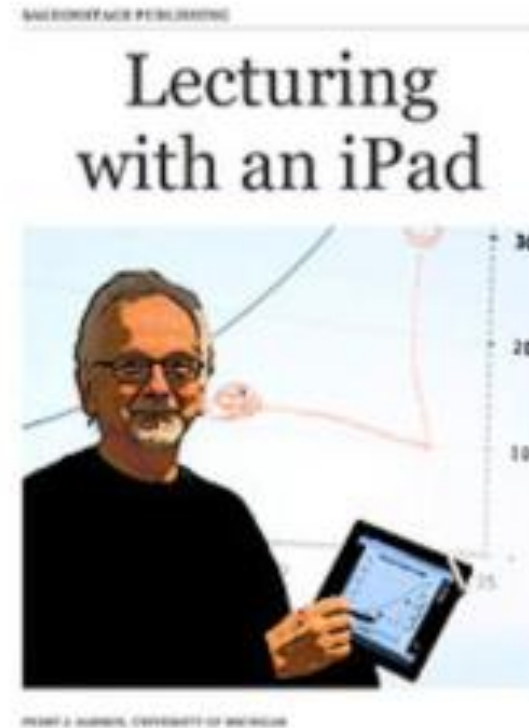
- **Effect on...**
 - Attentiveness
 - Engagement
 - Learning

LT RESOURCES

Making the Switch



iPad in Class



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