Technology for Notetaking: Tools to Help Students Capture and Organize What They Learn

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Goals for Today

What is “knowledge management”?

Introduce technology tools to support notetaking and knowledge management strategies
  ‣ Demos

Key Learning Outcomes
  ‣ List the four FIVE components of an effective “knowledge management” system
  ‣ Describe challenges to effectively taking notes in class and during self-study or research
  ‣ Identify tools and associated strategies that assist with capturing and managing information collected in class, from books, online, and from other sources
Notetaking: an Academic Survival Skill

To succeed, students need an effective means of managing what they learn and know.

Especially true in high school & college, but also middle school.
“Taking notes” = Capturing information you plan to use later
  ‣ Reference, quick retrieval
  ‣ Review (e.g., study lecture notes for test)
  ‣ Retain (practice, integrate into memory)
  ‣ Repurpose (e.g., write paper or research report)
  ‣ Reflect (consider, evaluate)

To be useful, also need to:
  ‣ Organize “notes” in a way that make sense
  ‣ Quickly find information you need
  ‣ Apply info easily to the task at hand

Notetaking is first step of “Knowledge Management”:
  ‣ Capturing and organizing what you learn so that you can readily find and use that knowledge when needed
"CORE" of an effective Knowledge Management system

CAPTURE - What is important to capture? How will I capture it?
  ‣ Visual (whiteboard, slides, video)
  ‣ Auditory (lecture, discussion)
  ‣ Text (handouts, books, Web)
  ‣ Other (personal thoughts, observations)

ORGANIZE - How will information be stored and arranged?
  ‣ Manual or automatic organization?
  ‣ Need ability to reorganize and add more info later?

RETRIEVE - How will I quickly locate what I need?
  ‣ Search by category, date, time (for audio/video), keywords, tags, or browse

EMPLOY - How do I plan to use the information?
  ‣ Study or review => facilitate self-test, tracking progress
  ‣ Repurpose (e.g., use in report) => capture source for bibliography

C.O.R.E. strategy © 2008-2014  Rachael M. Haven

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Tools for Two Different Scenarios

Taking notes in class
- Visual (whiteboard, slides, video, demos)
- Auditory (lecture, discussion)
- Text (handouts, books, Web)
- Other (personal thoughts, observations)
- Time constraints, less control over distractions

Self-study
- Reading books, articles, stories
- Web research
- Homework
- Some control over time, distractions
- Less structured
Class & Self-Study Notetaking Challenges

- Dysgraphia / visual-motor coordination
- Auditory processing / processing speed
- Working memory
- Recognizing important points
- Recognizing connections, “the big picture”
- Inability to focus (e.g., auditory-only instruction)
- Disorganization (can't readily locate info later)
- Impatience (cram papers into backpack)
- Retrieval (can't readily recall from memory)
Tools to aid TAKING NOTES IN CLASS (1/3)

Basic approach #1: provide framework for material, reduce material to be copied

Notetaking template
- Provides mental framework for new material
- Word processor outline (good), graphic organizer software (better)

Electronic whiteboard
- Snap “screenshot” of board with whiteboard's software
- Record video and audio of whiteboard contents with software

PDF annotation software
- Type, annotate onto PDF copy of teacher notes, slides

Take pictures!
Structured notetaking template

Teacher provides (all) students with basic framework
  ‣ Paper or digital (Word, graphic organizer)

Helps organize thinking, anticipate
  ‣ Reduces cognitive load

Notes pre-organized to review later
  ‣ Use same approach for self-study
Annotate PDF worksheets, slides

Student annotates PDF worksheet or slides
  ‣ Typing, colored highlighting, boxes, circles, arrows

Mac: Preview

Windows: Free third-party PDF annotation software

Add text, shape, sticky note, and voice annotations with Adobe Reader v11+
  ‣ View > Comment > Annotations/Drawing Markups
  ‣ Select Speaker icon, place on file, record, save
Picture is Worth 1000 Words

Visual images reinforce understanding, retention

Taking photo taxes working memory less than copying
  ‣ Whiteboard (e.g., homework)
  ‣ Experiment setups
  ‣ Steps in process
  ‣ Reference page in textbook
  ‣ Parking space

Digital camera, cell phone, apps

Drop into digital notebook, email, reminder or to-do app
Electronic Whiteboards

Most software can capture writing & drawing in real time
  ‣ Screenshots
  ‣ Record, play session as “movie”
  ‣ Provides dynamic record of lesson

Provide all students w/ copies of boards
  ‣ Reduces need to scribe notes

“Poor man's” alternative: digital snapshot of whiteboard
Tools to aid TAKING NOTES IN CLASS (2/3)

Basic approach #2: type and draw notes digitally; reorganize, append, and search later

Portable word processor
  ‣ Laptop alternative

Graphic organizer software, outliner
  ‣ Inspiration, Word or Pages (outline mode)

Digital notebook
  ‣ Microsoft OneNote, Circus Ponies NoteBook, others
  ‣ Evernote
  ‣ Some synchronize typed notes with recorded audio

iPad notetaking apps
  ‣ AudioNote, Notability, many others
Digital Notebook

Digital version of spiral notebook
  - Easily organize, rearrange
  - Highlight, annotate
  - Tag with dates, keywords
  - Attach related files, emails
  - Record audio, sync with notes

Clip material from Web, docs
  - Retains link to source

Robust search, indexing
  - Quick retrieval - “external brain”
  - Grammar rules, solved math problems, writing models, checklists, vocabulary, reference info, etc.
iPad Notetaking Apps

Features (vary by app)

- Type notes as outline
- Images and drawing
- PDF annotation, Web clipping
- Audio recording synched to notes
- Take photo & annotate
- Handwriting recognition
- Organizational system

Sync notes to computer, “cloud”, or email to self

Apps to consider:

- Simple: SoundNote, AudioNote
- Robust: Notability, Notes Plus
- Many, many, many more
AudioNote: Simple iPad Notes App

Multiple inputs
- Handwrite, type, or draw
- Record audio
- Take a photo
- Annotate PDF

Audio synchronized to notes
- Tap note to start linked audio
- Notes highlighted during playback

Export notes with audio through email, Wi-Fi, or iTunes

Mac, Windows, iOS, Android
- Free and full versions
Notability: Full-featured iPad Notes App

**Handwriting, drawing, typing**
- Handwrite into magnified section
- Palm rest prevents stray marks

**Advanced word processing**

**Audio recording linked to notes**

**Media insertion**
- Photos, web clippings, diagrams
- PDF annotation

**Organization system**
- Dividers > Subjects > Notes

**Auto-syncs to “cloud”**
- Share via email, Dropbox, others
Tools to aid TAKING NOTES IN CLASS (3/3)

Basic approach #3: supplement w/ audio, video, images

Digital voice recorder or recorder app

Livescribe smartpen
  ‣ Synchronize handwritten notes with recorded audio

Digital camera

Some digital notebooks, iPad apps
Livescribe Smartpen

Links notes & audio recording
- Records audio
- Captures notes, drawings written on special microdot paper
- Tap note to playback linked audio

Potential to reduce notes taken
- Listen more, write less
- “Digital auditory memory”
- Best coupled with notetaking strategy

Upload notes and audio to...
- ...computer (Echo)
- ...wirelessly to Evernote (Sky WiFi)
- ...iPad (Livescribe 3)
How Livescribe Works

Special paper has unique microdot pattern

IR camera in pen sees pattern, tracks location on page, page number, and written notes
Notetaking Strategy to Leverage Audio Recording

Goal: listen more, write less, target your playback
   ‣ Use with Livescribe or notetaking apps that record linked audio

Before: Think about what you want to listen to later:
   ‣ Assignment, action item, "This will be on the test"
   ‣ Main points, change in topic or activity
   ‣ Title of projected title (running list in margin as "index")
   ‣ Don't understand, zoned out for a few minutes

During: Actively listen for and mark these points
   ‣ Symbols: star, question mark, circled "A" (assignment), etc.
   ‣ Keywords, abbreviations (not full sentences)

After: Summarize verbally while fresh in mind
   ‣ Immediately after class, or later that day (10-30 seconds)
   ‣ Listen to own “summary” for quick review
Tools to aid SELF-STUDY

**Basic approach:** annotate text; extract annotations, text, images into study guide

- Highlighters, sticky notes & tags, 4-color pen
- **Literacy & learning software with study tools**
  - Use with active reading strategies (e.g., SQ3R, PQRST)
- **Graphic organizer (e.g., Inspiration)**
- **Clip text, images to digital notebook**
  - Automatically tracks source of copied material
  - Cloud-based digital notebook
Low Tech, but Effective Annotation

Four-color pen
Colored highlighters
Colored sticky tabs
...and a strategy for using it all
Highlight & Annotate Digital Text

Digital version of marking textbook
- Highlight words, passages with color
- Annotate with stickies, text notes
- Add voice notes

Extract text & notes as study guide

Works best coupled with active reading strategies

Available on most literacy & learning software
- Specific study tools vary by product
iBooks app (iPad, Mac OS 10.9)

Annotation options
- Highlight text (5 colors)
- Underline
- Sticky notes
- Bookmark pages

View and export annotations
- “Notes” tab for summary
- Print, or email to self
- “Digested” freeware for Mac

Convert Bookshare to iBooks
- Copy/paste text to Pages
- File > Export > ePub...
- Drag to Books in iTunes
- ...or Don Johnston DAISYtoEPUB
Inspiration as notetaker

Drag/drop or copy/paste text & images from Web, docs, e-text

- Start with template
- Large monitor helps (side-by-side documents)

Organize, rearrange, expand

Self-test features

- Expand/collapse subtopics to show & hide answers, details as you self-test
- Check off those you have learned
Clip to digital notebook (OneNote, others)

Select text or image – Web, email, documents

Send to page in notebook (procedure varies by software)

Clipped material retains link to source

‣ ...great at bibliography time!
IRISPen 7 handheld text scanner

Swipe across printed text
- Text scanned, recognized, uploaded to computer
- Enter text into any software instead of typing
- Suggestion: use with notetaking template

Need adequate fine motor skills
- Swipe at constant speed in straight line
- OK for a few lines, not entire pages
Evernote - digital file cabinet

Capture any digital “stuff”
- Text – email, docs, Web
- Photos, images
- Web clippings, files
- Voice recordings
- Sketches, scribbles
- Reminders
- Files from partner apps (e.g., Notability, Livescribe, many others)

Retrieve “stuff” based on criteria
- Text search, image search, tags, date created, saved searches

Capture, send, and retrieve from whatever is handy
- Mac, PC, any browser (need Web Clipper), smartphone, e-mail
- Everything synchronized/organized to Evernote cloud
Don't Forget Notetaking Strategies!

Tools alone are not enough!

Match strategy & tools with subject matter

- **Literature**: plot, setting, characters, quotes, conflicts, themes
- **Social studies**: people, places, events, dates - chronological, cause & effect
- **Science**: concepts, diagrams, terms - cluster maps, tables, cause & effect
- **Math**: orderly process, problem-solving, identities, rules - steps
- **Foreign language**: words rules, phrases/sentences, examples

=> Create notetaking templates for each

Get ideas down now, organize later

- Telegraphic notes (abbreviate words, use symbols - decide in advance)
- Mechanics and cognitive load of organizing slows notetaking

**Strategies + Capture, Organize, Retrieve, Employ = S C O R E**
Matched with the right tools, students can more easily demonstrate their potential.
For more information & other AT resources...

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For more info on technology described herein, visit the AT Toolbox:
www.TechPotential.net/ATtoolbox