Digitising Note taking accommodations: Revolutionising the Way Students Work with Spoken Information

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Sonocent
ADCET February, 2018
About Jim Sprialis

- 30 year teaching career in mainstream and special education
- Assistant Principal, State Manager – Inclusive Technology Service
- Established Sprialis Consulting in 2014
- Service schools, higher education, workplace
- Apple Accessibility Ambassador
- National Education Manager for Voice Recognition Australia
- Australian Representative for Sonocent
Session Outline

- Importance of effective note-taking
- Challenges for students with disability
- What is effective note-taking?
- The Sonocent workspace
- What about lecture captures and flipped content?
- Current impact and learner benefits
- Q&A
Effective note taking is incredibly important to student attainment

"...accurate and complete notes are critical for students to be successful in content area classes."
Boyle, J.R. (2012)

"...if information is recorded poorly in their notes, students will more than likely perform poorly on tests."
Stringfellow, J.L., & Miller, S. P. (2005)

Better notes lead to better grades

“The highly positive relationship between notetaking [...] and achievement was [...] confirmed correlationally”
Note-taking is a highly complex task placing more burden on memory and processing skills than playing chess.


Trying to process and manipulate extensive verbal information places great demands on working memory.
SwD really struggle with note taking

<table>
<thead>
<tr>
<th>Task</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Computer use</td>
<td>40%</td>
</tr>
<tr>
<td>Oral presentation</td>
<td>40%</td>
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<tr>
<td>Written course work</td>
<td>50%</td>
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<tr>
<td>Written exams</td>
<td>60%</td>
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<tr>
<td>Listening</td>
<td>50%</td>
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<tr>
<td>Remembering facts</td>
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<tr>
<td>Concentration</td>
<td>40%</td>
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<tr>
<td>Handwriting</td>
<td>40%</td>
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<tr>
<td>Expressing ideas in writing</td>
<td>50%</td>
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<tr>
<td>Expressing ideas orally</td>
<td>50%</td>
</tr>
<tr>
<td>Time keeping</td>
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<tr>
<td>General organisation</td>
<td>30%</td>
</tr>
<tr>
<td>Organising essays and reports</td>
<td>40%</td>
</tr>
<tr>
<td>Punctuation</td>
<td>30%</td>
</tr>
<tr>
<td>Note-taking</td>
<td>90%</td>
</tr>
<tr>
<td>Spelling</td>
<td>40%</td>
</tr>
</tbody>
</table>

What is effective note-taking?

- **Capture**
  - Need to **capture** the information to later **review**

- **Synthesis**
  - **Summarising** is key to learning
  - Helps recall and **long-term retention**

“Studies have found that note-taking is most effective when notes are organized and transformed in some way.”

Brown, C (2015). What’s the best, most effective way to take notes? The Conversation.
Note-taking is most effective when done independently.
The Sonocent workspace

Sonocent Audio Notetaker
(PC/Mac)

Sonocent Recorder
(iOS/Android)
The Sonocent workspace in action
Preparing for and capturing a lecture
Annotating the spoken information
Prior to Einstein, it was believed time was a constant - consistent across the universe.

Theory of Special Relativity - Time is relative.
We experience time differently depending on velocity.

"Time Dilation" = time slows at higher speeds. This proves it’s possible to travel into the future.

Astronauts who’ve spent 2 years aboard the international Space Station are now living in the future (~ 20 milliseconds).

The Pitfalls & the Possibilities
Possible
Problem solvers
Articulate travel
Navigating plot
Reliability over travel
Improve
Unsolvable
Plot hole
The Pitfalls & the Possibilities

Positives
- Time in the future
- Time for the next event
- Time for the next tour
- Time for the next opportunity

Improbable

Timey-Wimey Stuff

- Time Travel
- Time歪測
- Time Bends
- Time loops
- Time Travel

The Theory of Special Relativity - Time is relative.

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Astronauts who've spent 2 years aboard the International Space Station are now living in the future (~20 milliseconds).
Export audio summary as a study guide - 3
Export audio summary as a video

Rules of time travel > restrictions & challenges?
Download!

Already happened!
Sp?
Fiction > fact

Sliding scale
Plot hole
The Pitfalls & the Possibilities

Prior to Einstein, it was believed time was a constant – consistent across the universe.

Theory of Special Relativity – Time is relative.
We experience time differently depending on velocity.

*Time Dilation* - time slows at higher speeds. This proves it’s possible to travel into the future.
Sonocent Recorder – free companion app

Add layers of meaning
- Use colour highlighting instead of writing notes
- Create new sections when the speaker changes topic

Create multimedia resources
- Type brief text notes for further context
- Add snaps of diagrams, slides, and formulas

Each phrase is displayed as a chunk. Colour chunks or sections with the editable colour key. Add sections just like index marks.
Sonocent Recorder – Scribble feature
1. 25% speed of light = 3% slowing of time
2. 99% speed of light = time slowed by factor of 7
3. 99.999% = factor of 224
   6 years in space = 1,000 "Earth years"
To recap, with Audio Notetaker, students can:

- Capture everything, reducing anxiety about missing key information
- Immediately apply active listening comprehension strategies
- Begin synthesizing audio content that is aligned to slides and text
- Extract selected highlights to repurpose as study guides and written assignments

The visual representation of the recording adds a tangible cognitive bridge to the audio content.

The software scaffolds the application and development of study skills.

Most importantly, struggling students are empowered to build greater independence and ownership in their learning.
What about lecture captures?

Lecture capture is purported to support students with disabilities by circumventing the note-taking problem...

But is providing students with a recording of their lectures enough?
Key findings of literature

• Students benefit from using technologies that enable them to repeatedly return to material and select the pace with which they study. (Turney et al, 2009)

• “transforms an ephemeral event into a learning object”
  (REC:all, 2012)

• Recorded lectures have little to no effect on student results
How do students use recorded lectures?

- **Revision**
- **Note taking**

**Behaviour whilst using recordings**

- 94% Pause to think/make notes
- 86% Write notes
- 84% Watch some segments repeatedly
- 51% Consult other sources of information on the topic
- 55% Eat or drink
- 25% Browse mail, Facebook, other websites
- 15% Mobile i.e. on bus, train, walking

(Sloman, 2013)
Students reported reviewing video recordings as time-consuming (Karnad, 2013)

Students with dyslexia use lecture capture recordings more & listen to them for longer (Leadbeater et al, 2013)

“ I will spend two hours, two and a bit on a one hour lecture because I stop it, take lots of notes, re-listen to bits, Google a word that they referenced that I didn’t know what that meant or I’ve forgotten”

LC student survey respondent. (from: Cornock, 2015)
Use Audio Notetaker to record lecture capture videos, webinars and flipped content into a more accessible format.

Accessible notes are a vital part of an accessible education.
What do students and campus staff think?
Student survey results

78% of students use the Sonocent app for iOS and Android

77% of students use Sonocent outside of lectures, to engage with content in a variety of educational settings

Do you agree with these statements?

- My notes were as good as, or better, than my classmates’
- I was engaged throughout my lectures
- I was able to capture all of the important points
- My notes were clear, structured and useful for studying from
- I felt able to study independently, without help from others
- I was very prepared for exams, essays, presentations and large projects

All data from a June 2016 end user survey, with 929 student respondents
Measuring Impact

Sonocent is *proven* to create *learning independence* and improve grades

*Grade increase in individual students at The University of Nevada*

80% of students experienced an average improvement of **one full grade** (e.g. a B to an A) over a single semester

"Every student tells me it’s making a difference. And it shows whenever we do end-of-semester grades."

Darrin McCarthy
Lead Student Assistive Technology Specialist
University of Nevada, Reno
Measuring Impact

Sonocent is proven to create learning independence and improve grades.

Grade increase for students at Tennessee Technological University

100% of the 25 students identified as ‘at risk of failure’ experienced an average improvement of more than one full grade over a single semester. They all retained their place at college.

“Of the students to whom we gave the software we didn’t have a single one who didn’t increase their GPA.”

“We had a student who had flunked the previous semester go to somewhere in the neighbourhood of a 3.0 average. He said that had it not been for the software, he wouldn’t still be at the college.”

Edward Beason
Lead Student Assistive Technology Specialist
Tennessee Technological University
## Measuring Impact

### Preliminary findings from recent adopters in Australia

- **One of the first Australian institutions to implement as a digital note taking accommodation**
  - "I recommend it every day and our students are just amazed when we tell them about the wonderful ways Sonocent can assist them."
  - Karen Darby, Curtin University

- **Conducted a small scale rollout for 2017 academic year**
  - "Sonocent has enabled students to take control of their note taking and enhanced the quality of their notes; they’re no longer relying on the content, accuracy and timeliness of notes from a peer note-taker."
  - Annie Harris and Ngaire Robertson, University of Adelaide

- **Recently completed a pilot project conducted during the final semester of 2017.**
  - "We anticipate that many more students will approach D.A.s in 2018 seeking the software as an alternative to professional notetaking."
  - Nola Baker, Western Sydney University
During the pilot, students primarily used Sonocent to:

• Colour code audio recordings according to ‘value’ of the information to the student.

• Pair audio with PowerPoint slides from lectures

• Create summaries aligned with recordings.

“I was able to focus more on the parts I had trouble understanding, and remove all the waffle that increases my mind drifting off.”

Wayne, B Science student, Campbelltown
Qualitative Data from the Post Pilot Surveys: Key themes in the feedback

• **Focus and improved understanding of material**
  - Students report increased ability to concentrate on the information that matters to them.

• **Ease of use**
  - Students love the fact that the program allows them to work with audio, slides and text in the one workspace.

• **Improved engagement in the lecture**
  - Students have reported that they are able to relax and enjoy their lectures more and participate in discussions.

“I have loved using this technology. It has made my notes succinct and have kept them all in one place, nicely organised and easy to follow which was something I was struggling with prior to using Sonocent.”

Christina, BHSC (O.T.) student, Campbelltown
Student feedback from Western Sydney University Disability Service Sonocent Audio Notetaker Pilot, 2017.

“This software package is amazing for students and note taking in general! It helps you structure and organise your notes for not only lectures and tutorials, but also with assignments. This is the kind of software that not only students with disabilities need but … pretty much anyone who does research or studying for a course. …...The university should look at incorporating this software into its course fees and offer it to everyone.”

Arthur, B. Psychology student, Kingswood

“I find the Sonocent software is really helpful for screen capture of online lectures, highlighting salient explanations and making a video that allows me to view it later on TV.”

Morgan, B. Grad. Dip. Psychological Studies student, Kingswood

“Being able to download the lecture recordings and take notes whilst looking at the slides in the same app was great as I am usually unable to take complete notes whilst in lectures. I also used it during practicals/workshops that were not recorded so I could go back and revise things I was unable to write down or missed.”

Ingrid, B. Science (Zoology) student, Hawkesbury
Key Pilot information

• Professional notetaking has been removed from approximately 200 students this semester, so it is reasonable to anticipate that many more students will approach D.A.s in 2018 seeking the software as an alternative to professional notetaking.

• It should also be a regular recommendation for new students registering with the service in 2018.
Key Pilot information

- The free trial pilot licenses expired on 15/12/17.
- We have purchased 200 licenses for 2018 academic year. Licenses will be made available to those students who have participated in the trial and indicated that they want to continue to use the software while at WSU.
What next? We need to:

• manage licenses and provide support for students using the software.

• collect data over a longer period, including GPA before and after. Data collected over the next 12 months could be used to support a case for a university site license for all students.

• advocate for a universal **Recording Policy** at the university.
Who else has implemented Sonocent?

Over 300 institutions, including:

- The University of Edinburgh
- University of Central Florida
- University of Bristol
- University of Bath
- UC Davis
- University of Nevada, Reno
- Berkeley
- Curtin University
- Griffith University
- Swinburne University of Technology
- Flinders University
- Deakin University
- La Trobe University
Accessing Sonocent

- Free semester trial of Audio Notetaker
- Ongoing support provided
- 25 user license provision recommended
- More information at
  - www.sonocent.com/australia

Invitation is open to institutions across Asia-Pacific
Frequently Asked Questions

The recording quality. What is it like?
- Audio Replace

To what level has it reduced the provision of peer note takers?
- University of North Florida

Can it transcribe audio?
- Dragon
- Wordstonote
- www.wordstonote.com

How much training do students need to use the software?

Is the software accessible?
- Lecture capture format of choice for Uni of Huddersfield
Cost effective academic transcription service that enables you to create text summaries from lectures and classes.

Find Audio Notetaker helpful?

If you’re hard of hearing or an international student you can now rely on accurate transcriptions to increase your confidence and independent learning.

- Highlight recordings and order a transcript straight from Audio Notetaker.
- Only transcribe what is useful and pay by the minute for a cheaper solution.
- Use audio and text together. Import transcriptions back into Audio Notetaker to align with the right sections of audio.
- Make your notes work best for you. Pair transcription with notes and slides to consolidate knowledge.

wordstonote
In the past 30 days you have placed only one order, which was on 04 February 2018. Please note that all jobs will only be stored for 30 days from the date of upload. Please ensure that you collect your completed jobs before then.

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Order Status: Job Completed
Estimated Delivery: 2017-11-18
Total Audio Files: 2
Total Length of Job: 38 minutes
Download Report: Job Report
References


References (cont.)


- **Karnad, A. (2013).** ‘Student use of recorded lectures: a report reviewing recent research into the use of lecture capture technology in higher education, and its impact on teaching methods and attendance’. Retrieved from: [http://eprints.lse.ac.uk/50929/1/Karnad_Student_use_recorded_2013_author.pdf](http://eprints.lse.ac.uk/50929/1/Karnad_Student_use_recorded_2013_author.pdf)

References (cont.)


• Sloman, L. (2013). Students’ use of Lecture Capture. Retrieved from: [http://www.slideshare.net/LeonieSloman/students-use-lecture-capture](http://www.slideshare.net/LeonieSloman/students-use-lecture-capture)


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