Note Taking

Ratnaprabha G K[1], Shashikala P[2]

[1]Associate Professor, Department of Community Medicine, [2]Professor & Head of the Department, Department of Pathology, S. S. Institute of Medical Sciences & Research Centre, Davangere

Students' notes, created in class or while reviewing course material, are an important tool for learning. Many students and instructors feel that note-taking is an obvious and intuitive skill to have, yet few consider or encourage best practices. Unfortunately, many students are unaware of the benefits that effective note-taking may have on their learning, and the importance of cultivating their note-taking skills over the course of their education. Good note-taking practices can lead to efficient study practices, better course outcomes, and improved retention of content beyond a course's conclusion. Note-taking is valuable skill to individuals in both academic and non-academic settings. One speaks faster than writing or reading, therefore learner has to pay keen attention to the speaker to extract meaning from the spoken sentences and then take notes which demands lot of mental process. To provide a comparison, note-taking has been found to be as cognitively demanding as playing chess, as both require the retrieval of knowledge, planning, and the development of solutions.[1]

Address of Correspondence:
Dr Shashikala P
Professor & Head, Department of Pathology
S. S. Institute of Medical Sciences & Research Centre, Davangere
Email:shashikalakrishnamurthy16@gmail.com

Why take notes…?

People take notes for many different reasons, including: to learn, to enhance long term retention, and to document events. Note-taking allows people to outsource their memories to an external source (paper), as well as make content explicit for future reference. Critically, learning can occur during both the production and review of notes by allowing the learner to make connections between idea units and engage in deep processing of course content.[1,2] The act of note-taking also assists the learner in generating and semantically processing information, in addition to facilitating and strengthening the internal connections between ideas.[3]

Cognitively, note-taking depends upon working memory (WM) – the memory store responsible for both short-term storage (what you are currently thinking about) and the mental transformation of information (manipulating and modifying what you are currently thinking about).[4] In the context of note-taking, WM is used for both comprehension (attention and understanding of course content) and production (identifying important content and physically generating notes).

What is the best method of taking note?

Note-taking styles can be broadly classified into two categories: linear and nonlinear styles. Linear styles or note-taking in a format similar to conventional written texts or outlining, are some of the most common styles of notes used by students.[5] In contrast, non-linear styles that use graphical representations (e.g. mapping method) allow students to organize the content of their notes in a systematic, yet unconventional fashion that may be difficult for others to understand easily. Importantly, whatever style of note-taking the learner chooses to adapt (linear, non-linear, or a combination of the two), does not reduce the cognitive effort required for note-taking. Therefore the differences between note styles have a minimal impact on content comprehension. However, Piolat et al.[1] argue that non-linear styles of note-taking are more effective than linear styles because non-linear styles facilitate the process of making connections between idea units, which enhances learning through deeper processing and strengthens long-term retention of content. There is no perfect method for everyone. One has to practice and find a suitable method for oneself. Here are the five proven methods for note taking.[6,7,8]

1. Cornell method
2. Outlining method
3. Charting method
4. Mapping method
5. Sentence method

CORNELL METHOD

Page # *Layout of the page and where to write*	Today's Date Name of the Speaker • You physically draw a line vertically down your paper, leaving 2.5 inches on the left and 6 inches on the right. • This allows you to take notes on the right-hand side of the page leaving space on the left to summarize the main point with a cue word or phrase.
Organization of concepts	• When the instructor moves to a new topic, skip a line. • It is also a great idea to use some organizational structure to your whole page. • Use bullets. • You can underline important words.
Filling in blanks	• If you aren't able to completely write down an idea before the instructor moves on to a new topic, fill it in after the class.
Reviewing and Studying	• After class, test your knowledge of course material by covering up the right side of the page, reading the cue words, and trying to remember as much information as possible. Then check to see if you remembered correctly. Also write page and day summaries.
Advantages	• This is a simple and efficient way of recording and reviewing notes – it's easy for pulling out major concepts and ideas. It saves time and effort.
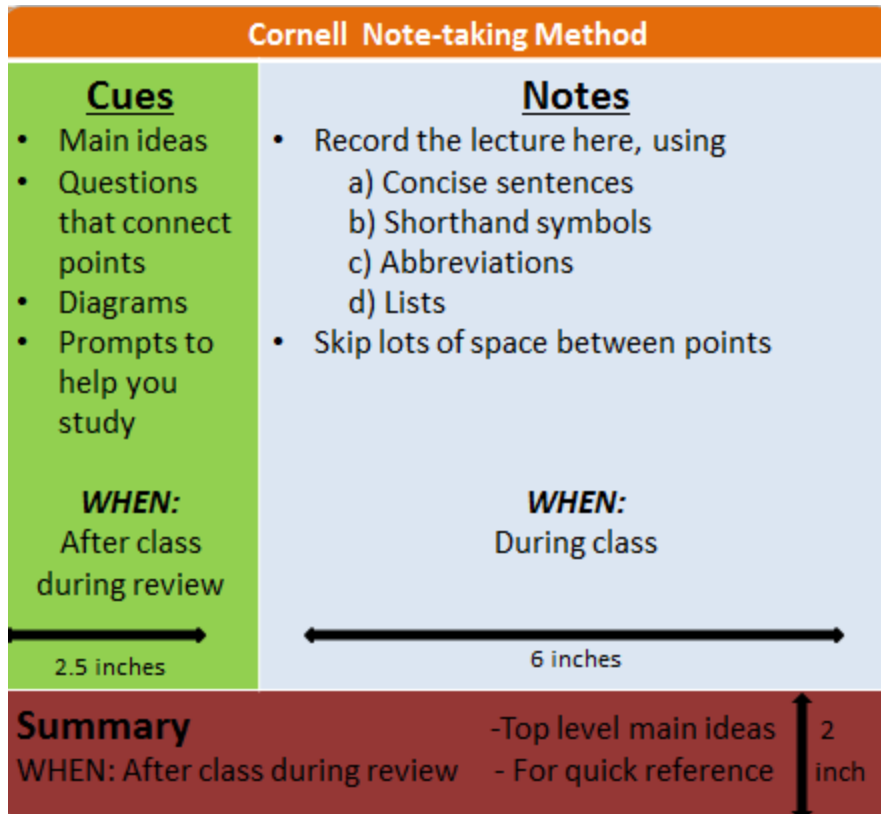
OUTLINING METHOD

Page #	Today's Date	Name of the Speaker

Class Topic: How to Outline Notes

I. The first level is reserved for each new topic/idea and is very general.

    a) This concept must always apply to the level above it (I)

        i.   This concept must always apply to the level above it (a)

        ii.   This is a second supporting piece of information for the level above it (a) but is equal to the previous information (i)

        iii. This information is a sister to (i) and (ii)

    b) This concept applies to the level above it (I) and is a "sister" to (a)

II. You don't have to use Roman Numerals, Letters, and Numbers – try only indents, dashes, and bullets.

III. Outlining requires listening and writing in points in an organizational pattern based on space indentation

    a) Advantages of outlining

        i.   It is well-organized

        ii.   It records relationships and content

        iii. It reduces editing and is easy to review by turning the main points into questions

    b) Disadvantages of outlining

        i.   It requires more thought during class for accurate organization.

ii.   It does not always show relationships by sequence.
iii.   It doesn't work well if the lecture is moving at a quick pace.

CHARTING METHOD

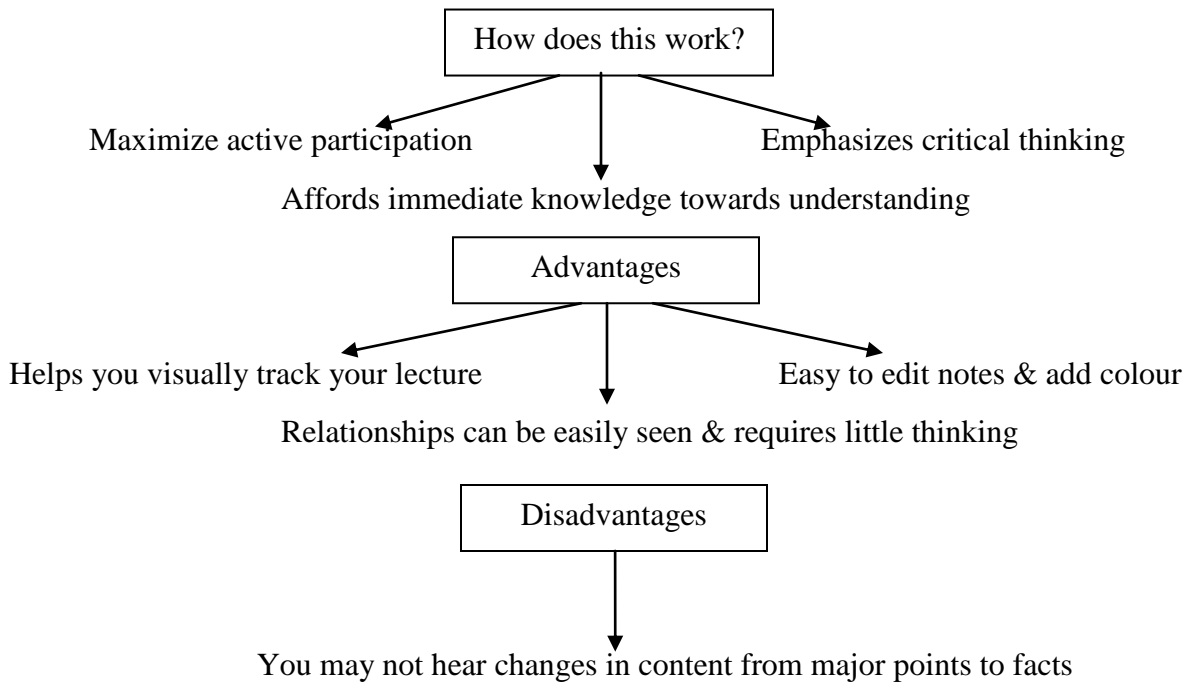**Page #**   **Today's Date**   **Name of the Speaker**

How?	Advantages	Disadvantages	When to Use it?
Set up your paper in columns and label appropriate headings.	Helps pull out the most relevant information.	Can be a hard system to learn to use.	If you'll be tested on facts and relationships.
The headings could be categories covered in the lecture.	Also reduces the amount of writing necessary.	You need to know the content that will be covered during the lecture before it begins.	If content is heavy and presented quickly – such as dates, people, events, etc.
Insert information (words, phrases, main ideas, etc) into the appropriate category.	Provides easy review for memorizing facts and studying comparisons and relationships.		If you want to get an overview of the whole course on one big paper.

MAPPING METHOD

Page #   **Today's Date**   **Name of the Speaker**

How does this work?

Maximize active participation   Emphasizes critical thinking

Affords immediate knowledge towards understanding

Advantages

Helps you visually track your lecture   Easy to edit notes & add colour

Relationships can be easily seen & requires little thinking

Disadvantages

You may not hear changes in content from major points to facts

4

SENTENCE METHOD

Page #   **Today's Date**   **Name of the Speaker**

1. Write every new thought, fact, or topic on a separate line as you progress, numbering each sentence.
2. Advantages: It's more organized than writing paragraphs and still records most of the information.
3. Disadvantages: It's hard to determine major/minor points and it's hard to edit and review with clean-up.
4. It's a good method when there's lots of information and you don't know how the ideas fit together.

All methods have their own advantages and disadvantages, however one advantage of Cornell Notes is that they could also be incorporated with the linear and non-linear styles explained above, allowing greater flexibility with this format. Although not directly supported by an abundance of empirical research, the Cornell Notes format does employ several of the principles supported by cognitive psychology, if used properly.[9] It helps students make connections between ideas, synthesize information, and better apply acquired knowledge to novel contexts.

Note taking can also be done with laptops, notepads, audiorecordings apart from pen and paper. A word to word recording of the lecture can be done with all these gadgets; however it lacks the cognitive skills required in a student to comprehend the lecture into simple notes which can be done with pen and paper. Students using these gadgets may also be involved in multi tasking (eg. checking mails, chatting, or watching videos) which may interfere with their learning during the lecture for themselves as well as students surrounding them.

Is it better to create your own notes, use instructor's handouts, or use another resource for notes?

Providing students with lecture slides, or handouts, before class begins is becoming increasingly common. Giving students such handouts in advance may allow them to review the material before lecture, assisting with their ability to comprehend the material during instruction, which may help students (especially those with learning difficulties or cognitive impairments) better remember and incorporate the material into long-term storage.[10] However this can hamper the learning by not allowing them to let think and make connections between ideas which is required for note-taking.[11]

When and How to Review Notes?

Notes are only useful when they are reviewed after some time, and this should happen as early as possible after the creation of notes and frequently. It has been shown that reviewing notes after some time leads to superior performance in the following tests over those that do not take notes initially.[2] Best way to review notes is by self test and Cornell method of note taking provides the

opportunity for this self test. Additionally, reviewing your own notes appears to be more beneficial for long-term learning than reviewing another's notes, due to the generative processing that occurs during the review, facilitating internal connections.[12]

Future prospects

There is a long way to go for hybrid note taking systems which combines advantages of pen and paper and a laptop. Here are some software applications.[13]

1. Livescribe (starts at $180) – Livescribe is a smartpen that records audio on a microphone and memory stick built into the pen as the learner takes notes. This system also includes a camera built into the tip of the smartpen to identify what is being written down on a second by second basis. The advantage of this system is it allows the learner to record the lecture and easily replay particular portions of the lecture by tapping the physical figure or words written in their notes.

2. Evernote ($4 per month to $35 per year) – Evernote is an application that allows you to store files online, making review any digital or scanned document relatively easy on a computer, tablet, or smartphone. By allowing users to create folder and tags, the user can quickly find the desired documents needed.

3. Audionote ($20) – Audionote is an application that uses some of the elements from Livescribe, but in a tablet format. Audionote allows the learner to start a recording and take notes on their tablet at the same time using a keyboard, while also allowing the user to draw figures or other relevant non-text information using either their finger or a stylus. Like Livescribe, Audionote allows learners to review the audio recorded, watch a video of the notes being re-created in sync

with the audio, and review specific sections of the audio by touching the associated content in the notes.

Suggestion for Students:

- Take generative notes, as much as possible in your own words and not writing verbatim.
- Choose method of note taking depending on your interest or style of lecturing or one can use combination of methods.
- Review notes early and often.
- Test yourself.
- Carefully consider how you want to take notes, using Pen Paper or Tablets or Laptops etc… given that every method will have some advantages and disadvantages.

Suggestions for Instructors:

- Explain your rationale for course policies. If you wish to incorporate any policies into your course that may improve student learning, you should explain your rationale for those policies at the beginning of the term.
- Provide students material before the lecture to orient them towards important ideas.
- Encourage students to take notes in their own words.
- Help make connections between current and past content.
- You can stress more about the important points which may be practically useful or exam oriented.

References

1. Bohay M, Blakely DP, Tamplin AK, Radvansky GA. Note taking, review, memory, and comprehension. The

American Journal of Psychology. 2011;124:63–73.

2. Piolat A, Olive T, Kellogg RT. Cognitive effort during note taking. Applied Cognitive Psychology. 2005;19:291-312.

3. Kiewra KA, DuBois NF, Christian D, McShane A, Meyerhoffer M, Roskelley D. Note-taking functions and techniques. Journal of Educational Psychology. 1991;83:240-245.

4. Baddeley A. The episodic buffer: A new component of working memory? Trends in Cognitive Sciences. 2000;4:417–423.

5. Piolat A. La prise de notes [Note Taking]. Paris: Presses Universitaires de France. 2001.

6. Pauk, Walter. How to Study in College, 2nd edition. Boston: Houghton Mifflin Co., 1974.

7. Raygor, Alton L, Wark D. Systems for Study. New York: McGraw- Hill, Inc, 1970.

8. Student Academic Services. Notetaking systems. California Polytechnic State University. 2011. Retrieved from http://www.sas.calpoly.edu/asc/ssl/notetakingsystems.html

9. Jacobs K. A comparison of two note taking methods in a secondary English classroom. 2008. Retrieved from http://soar.wichita.edu/handle/10057/1388

10. Boyle JR, Rivera TZ. Note-taking techniques for students with disabilities a systematic review of the research. Learning Disability Quarterly. 2012;35:131–143.

11. Peper RJ, Mayer RE. Generative effects of note-taking during science lectures. Journal of Educational Psychology. 1986;78:34-38.

12. Kiewra KA. Note taking and review: The research and its implications. Journal of Instructional Science. 1987;16:233-249.

13. Friedman MC. Notes on Note-Taking: Review of Research and Insights for Students and Instructors. Harvard Initiative for Learning and Teaching. Harvard University. 2014. Retrieved from https://hilt.harvard.edu/files/hilt/files/notetaking_0.pdf