

# Note Taking Skills for Student Success

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Why I wanted to present this topic:



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Objectives:

- Evaluate effective note taking strategies for learning from the literature.
- Describe best practices for note taking in the classroom, textbook reading, and review for student learning.
- List strategies for instructors to encourage students to use effective note taking for their learning.

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## Quiz time!

What do you know about note taking and student learning?

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Note taking is a skill

- Learning by trial and error
- Academic skills lectures

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The purpose for note taking is to collect the information that is intended for use in the future.

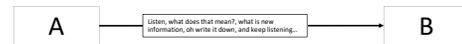
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### Piolat 2001:

“Note takers, as readers, must comprehend information and, as learners, try to store information in long-term memory by writing it down. As writers, note takers must select the information to record and format it in ways that differ from the source materials. They employ abbreviating operations, syntactical short-cuts, paraphrasing statements, and often a physical formatting of the notes that differs from the linear text of written source of material.”

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In other words,



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There are 4 main steps in note taking:

1. Listening or reading
2. Cognitive processing
3. Writing
4. Reviewing of the notes

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### 1. Listening a lecture or reading a textbook

- Listening to a lecture in the classroom
- Listening to a lecture NOT in the classroom
- Reading a textbook

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### 2. Cognitive processing

- Cognitive processing is the mental operation that triggers note taking.
- There are two process of note taking:
  - A. Encoding process
  - B. Storage process

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### 3. Writing

- Method of writing: long hand vs typing
- What to record: big ideas vs details
- Organization

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#### 4. Reviewing of the notes

- Reviewing own notes
- Reviewing others' notes (e.g: instructor's)

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#### How much cognitive effort is required for note taking?

- Things to consider in note taking
  - Rate of speech
  - Rate of transcription
  - Working memory

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#### Study on cognitive effort during note taking

- Method – dual task
  - They are required to do task #1, and concurrently assigned task #2
  - Reaction time is measured for task #2
  - Reaction time for task #2 is measured in reaction time (RT)
  - The RT is compared with the control (when it is just one task)
  - The cognitive effort is correlated with the degree of interference in RT (IRT)
    - The longer the IRT, the more cognitive effort required for task #1

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#### Study on cognitive effort during note taking

Rank the following activities in terms of cognitive effort requirement from low to high:

- Text copying
- Composing a text
- Reading a text
- Playing chess (novices)
- Playing chess (experts)
- Translating
- Revising
- Planning
- Note taking from a lecture

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Rank the following activities in terms of cognitive effort requirement from low to high:

Task	Cognitive Effort (approximate IRT in milliseconds)
Text Copying	150
Reading a text	190
Playing chess (novices)	250
Playing chess (expert)	370
Note taking from a lecture	380
Composing a text	390
Translating	390
Revising	390
Planning	400

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#### What is the relationship between cognitive effort and recall performance when students are taking notes under different conditions?

- Listening to a lecture vs reading lecture in a written format
  - Add in – taking notes traditionally or pre-outline technique

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### What are the conditions?

Condition 1:  
Listening to a lecture

Condition 2:  
Reading a written lecture

Note taking technique 1:  
conventional

Note taking technique 2:  
pre-outline

Student characteristic 1:  
high span

Student characteristic 2:  
low span

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### Hypothesis 1

Note taking in lecture condition required a higher cognitive effort than note taking in reading condition.

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### Results – on cognitive effort

Lecture type	Cognitive effort (mean reaction time in milliseconds) (SD)
Lecture condition	362 (0.12)
Reading condition	278 (0.10)

Note taking in lecture condition required a higher cognitive effort than note taking in reading condition.

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### Hypothesis 2

Note taking using pre-outline method requires more time than conventional method.

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### Results – on time required

Notetaking technique	Time required for note taking (in minutes)(SD)
Conventional	23.34 (8.28)
Pre-outline	27.89 (6.74)

Note taking using pre-outline method requires more time than conventional method.

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### Hypothesis 3

High-span note takers takes more notes when **listening**, and low-span note takers takes more notes when **reading**.

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## Results – number of words recorded

Student characteristics	Number of words recorded	
	Listening	Reading
High span	260	225
Low span	210	265

High-span note takers takes more notes when listening, and low-span note takers takes more notes when reading.

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## Conclusion

- Working memory is important for verbal information processing, and in the end produce notes.

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## What is the relationship between working memory, note quantity, and recall performance?

3 experiments:

- Taking notes by computer vs by hand on immediate test performance
- Taking notes in an organized manner vs transcription on immediate vs delay performance
- Taking notes in an organized manner vs transcription on immediate vs delay with review performance

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## Experiment 1 –Taking notes by computer vs by hand on immediate test performance

Proportions of Idea Units Recalled			
	Note taking Overall	Free Recall	Short Answer
Note taking by hand			
Organize	0.28	0.12	0.47
Transcribe	0.28	0.12	0.46
Note taking by computer			
Organize	0.34	0.12	0.50
Transcribe	0.44	0.18	0.64

Note taking by computer by transcribing shows the highest proportion of ideas units recalled

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## Experiment 2- Taking notes in an organized manner vs transcription on immediate vs delay performance (all using computer)

Proportions of Idea Units Recalled			
	Note taking Overall	Free Recall	Short Answer
Immediate			
Organize	0.25	0.12	0.50
Transcribe	0.42	0.16	0.64
Delay			
Organize	0.25	0.11	0.48
Transcribe	0.36	0.07	0.37

Taking organized notes result in better performance on delayed tests.

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## Experiment 3 – Taking notes in an organized manner vs transcription on immediate vs delay with review performance

Proportions of Idea Units Recalled			
	Note taking Overall	Free Recall	Short Answer
No study			
Organize	0.26	0.12	0.52
Transcribe	0.42	0.09	0.41
Study			
Organize	0.28	0.13	0.49
Transcribe	0.45	0.16	0.67

When review was allowed, transcribing lead to superior performance than organized notes.

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### What can we do as instructors to facilitate note taking?

- Explain your point of view on note taking to students.
- Orient students with the materials before lecture.
- Help students to make connections with past/related content.
- Educate students on device usage in the classroom.

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### What can students do in regards to note taking?

- Use your own words to generate notes.
- Review your notes along with the learning objectives.
- Review often.
- Test yourself with the materials.

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### Questions?



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