

Knowing when to hand write notes and when you should type will help you to remember the most important facts, recall concepts, and get smarter overall

Jim + Val's Africa 7/14/06 - 7/14/06-0
1/2/06 Monday 4h Fare out, Planning
1/3/06 Tuesday 11h Shim floor
1/4/06 Wednesday 10h Install upper door
1/5/06 Thursday 12h Install lower door
1/6/06 Friday 8h Shop for Rocks
1/7/06 Saturday 6h Prep North Africa
1/8/06 Sunday 11h Stages Evolution, Strechly
1/9/06 Monday 14h Finish north Africa
71h total

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Paint Sister
16h
6h Shower T.C.
28.55h
42.95h Paint T.C. Fair
71.2h 4h FR

Screen doors 5 453.33
Cut wood 7 4 total
6/8/06 4:00 - 5:45 - 1:00 Lunch 27.45
6/9/06 4:40 - 5:15 - 35.00 Lunch 11.20
9:00 - 2:00

1/5/06
Received my first Muesli's. Love
for Spain on the 10th in my first
pasta can. I'll have 1 for 1 week's what
they got in touch with Olga, Clara, and I
10th in a few days ago. She's working but
has the weekend's free. She is in Sevilla
the fourth of Spain, but has a car in it
11th, the second, her place on her car's
12th is a place to stay.
I also got my last plant Europe
13th to day, lots of good info. That's all
for now, well, talk to you next time.
1/4/06 The floor is level, it's not square, the
ceiling is a ceiling square, it's not on place.
I expect it's a good idea. Come across on
15th a quadropel Hala. Glad, first night
I did get my car. First confirmation
and Jim ordered 1000 to my web's account.
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Typing is fast.

Handwriting is slow.

Weirdly, that's precisely why handwriting is better suited to learning.

Take it from research psychologists Pam A. Mueller of Princeton University and Daniel M. Oppenheimer of the University of California, Los Angeles, who did a fascinating study investigating just how terrible laptops are for note-taking in classrooms.

Earlier studies have argued that laptops make for poor note-taking because of the litany of distractions available on the internet, but their experiments yielded a counterintuitive conclusion: Handwriting is better because it slows the learner down.

By slowing down the process of taking notes, you accelerate learning.

It works like this. If a skilled typist (also known as an American millennial or Gen Z) is sitting in a meeting, he or she will be able to write down almost every word said. And yet: that transcription process doesn't require any critical thinking. So while you're putting the words down on the page, your brain doesn't have to engage with the material.

As learning science has discovered, if you're not signaling that the material is important to your brain, it will discard the lecture from memory for the sake of efficiency.

But if you are taking notes by hand, you won't be able to write down every word the speaker says. Instead, you'll have to look for representative quotes, summarize concepts, and ask questions about what you don't understand.

This requires more effort than just typing every word out — and the effort is what helps cement the material in your memory. The more effort you put into understanding something, the stronger signal you're giving your brain that it's worth remembering.

Mueller and Oppenheimer conclude that for students, "transcrib[ing] lectures verbatim rather than processing information and reframing it in their own words is detrimental to learning."

The caveats

Critics of the study, and others like it, say that its findings are too mixed to be considered definitive. Rebecca Sullivan, a doctoral candidate at Columbia University, points out that the students handwriting notes didn't *always* outperform students typing them.

"In fact, in one test given shortly after participants watched the videos," writes Sullivan, "the laptop, eWriter, and no notes group all slightly outperformed the group that had taken handwritten notes on conceptual questions.

As Sullivan alludes to, the type of questions on the test also matter. Students who wrote notes by hand performed better on questions testing factual knowledge, but they did not "significantly outperform" the typing group on conceptual questions.

Finally, Sullivan points out that students rarely listen to a lecture, take notes, and then immediately take an exam; they usually have at least a night to study. And when researchers gave students the opportunity to study their notes before the test, the advantage of handwriting over typing "disappears."

None of these counterpoints invalidate the overall findings of the study — that handwriting notes leads to better retention — but they do add necessary context. It is a safe bet, but not a *sure* bet, that writing out your thoughts will help you remember them more clearly later.

The takeaway

The benefits of handwriting — though it's a disappearing skill — have been documented by lots of educational psychologists, who have found that handwriting engages parts of the brain that typing neglects, especially areas associated with memory formation. For these reasons, the arguments go, kids come up with more ideas when they're writing in cursive versus typing.

So, as French psychologist Stanislas Dehaene told The New York Times, you may want to step away from the keyboard.

"When we write, a unique neural circuit is automatically activated," he said. "There is a core recognition of the gesture in the written word, a sort of recognition by mental simulation in your brain, it seems that this circuit is contributing in unique ways we didn't realize."

The result?

"Learning is made easier," he concluded.