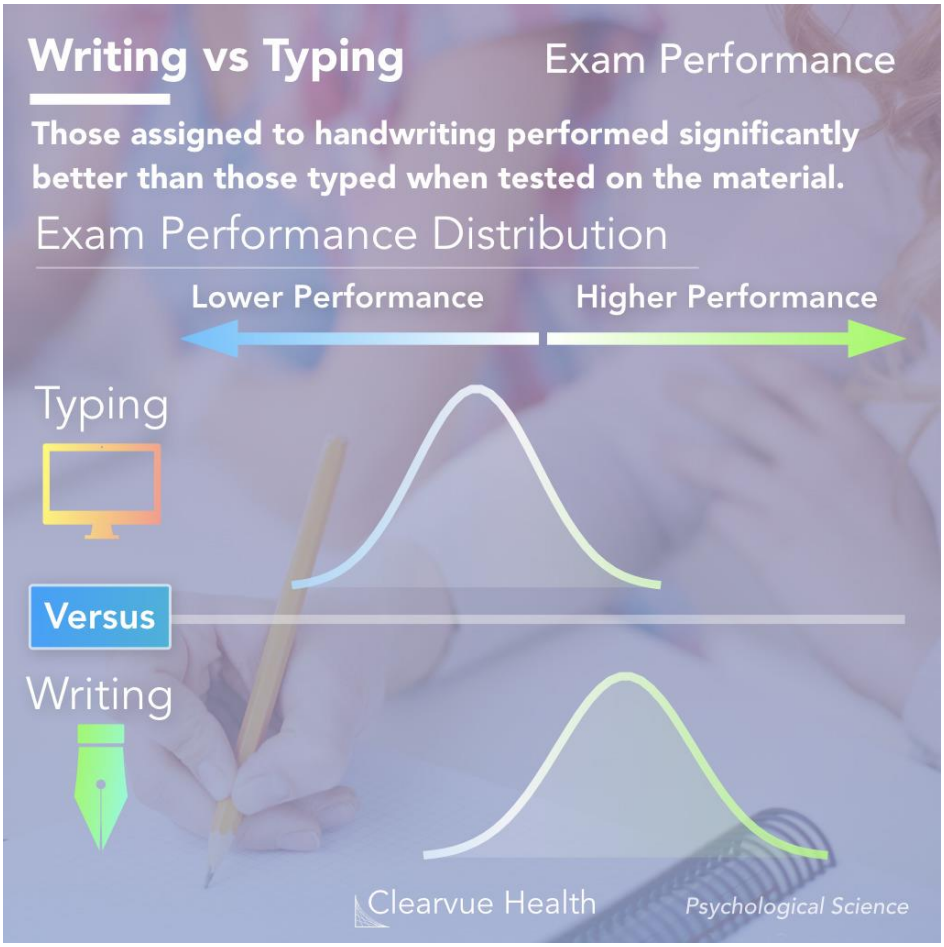
The Science of Notetaking: Writing vs Typing

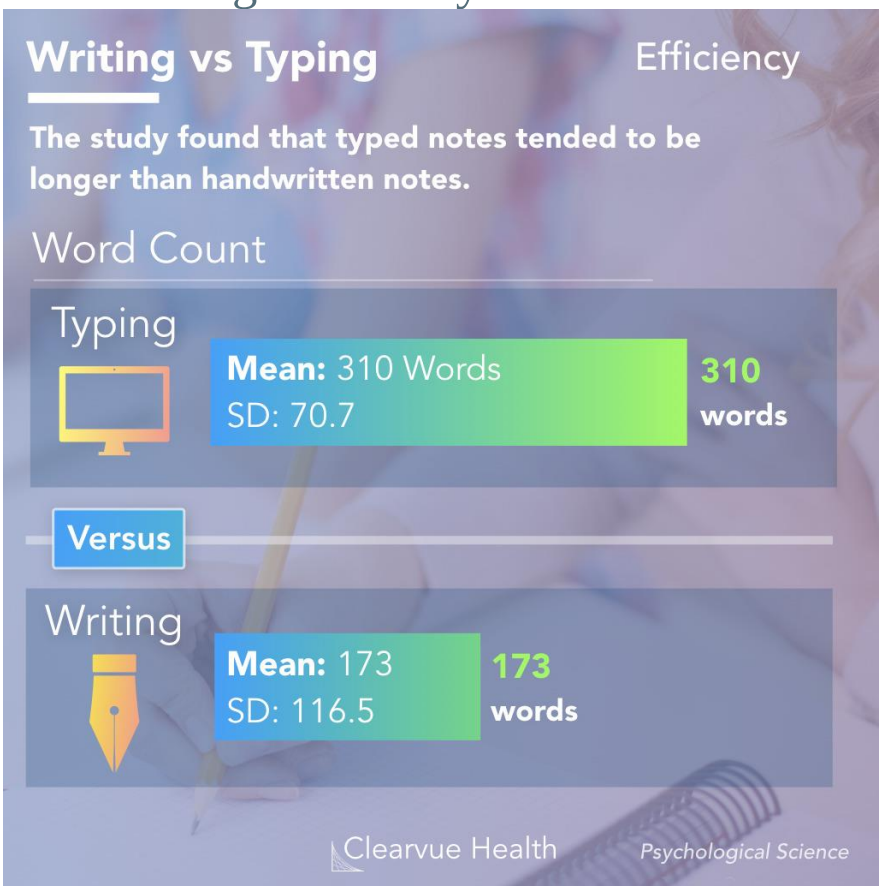
Reviewed by The Clinical Committee
january 12, 2019

- Students and teachers have debated endlessly about writing vs typing notes.
- However, there have been few scientific studies on this matter, until recently.
- Researchers from Princeton University set out to finally settle this with an experiment to determine once and for all, which is better writing or typing?



Ever since the advent of laptops, students and teachers have debated about the merits of typed notes vs written notes.
Those on computers tend to cite the speed of typing and the superior organization of typed notes. You can search typed notes, edit them, copy and paste them, etc.
However, others like your author still steadily hold on to their paper and pencils, swearing that they learn better with their low-tech luddite note taking methods.
Researchers at Princeton University decided to try to settle this matter by running several comprehensive experiments on college students to see whether writing or typing notes made a difference.

Note Taking Efficiency



One of the first metrics they looked at was the amount of notes taken. Not surprisingly, typing won by a longshot. In an experiment where students were asked to take notes on several TED Talks, students randomly assigned to type their notes took 310 words worth of notes on average while students assigned to write their notes only took 173 words of notes on average.

However, the standard deviation for both of these groups was relatively large. This means that the fastest writers could write more notes than a slower typist.

Winner: Typing

Top Questions and Answers

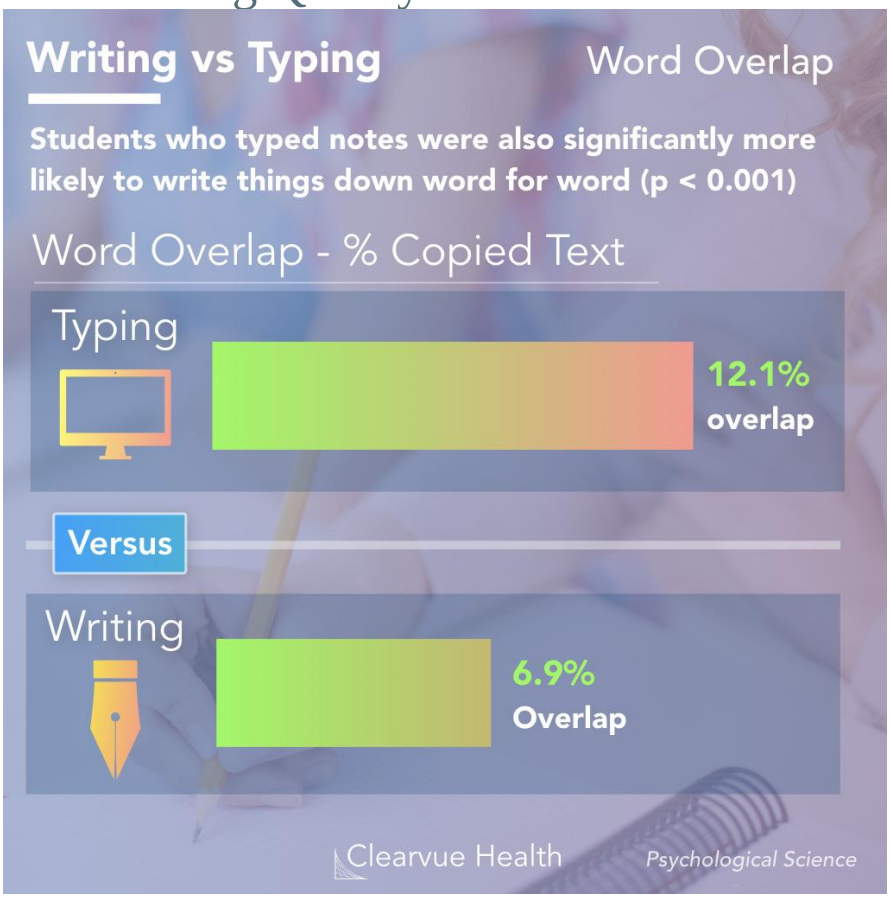
- The Science of Notetaking: Writing vs Typing
- Walking, Thinking, and Creativity
- Academic Performance and Bipolar Risk
- The Science of Notetaking: Writing vs Typing
- Fluid Intelligence: Reading vs Math

Does Vitamin C contribute to brain health?

Walking, Thinking, and Creativity

Rimegepant for Migraines

Note Taking Quality



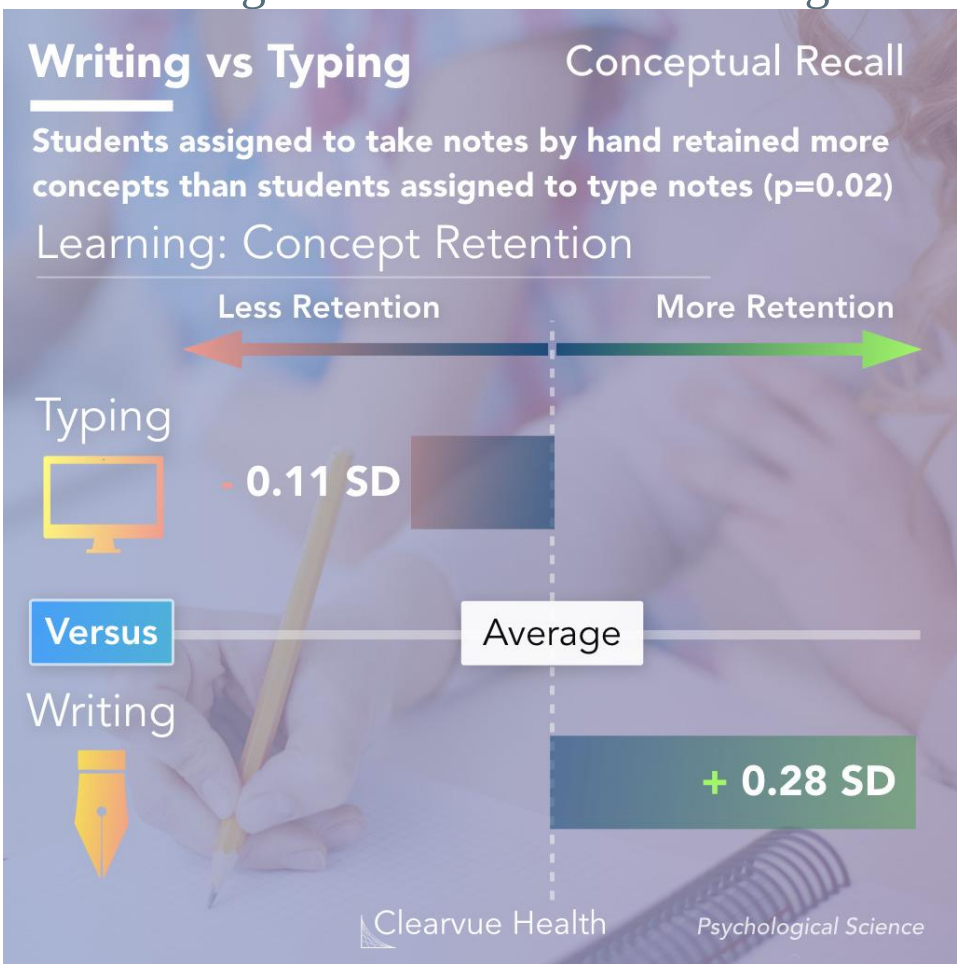
Now that we've established that typing notes leads to more notes being taken down, the next question is: are the notes being taken any good?

The researchers answered this question by looking at word overlap, an easily quantifiable metric. By looking at the number of words from the scripts copied word-for-word, they theorized that they could see how much effort went into taking the notes. Did the students try to digest the material, or did they just transcribe what was being said?

In their results, they found that students assigned to type notes had nearly twice the "word overlap" as students writing notes. This means that while students typed more notes, they may have done less thinking as they typed. Notably, researchers did find that word overlap was negatively correlated with performance, meaning that the less overlap a student had, they better they remembered the material.

Winner: Writing

Does writing notes lead to more learning?



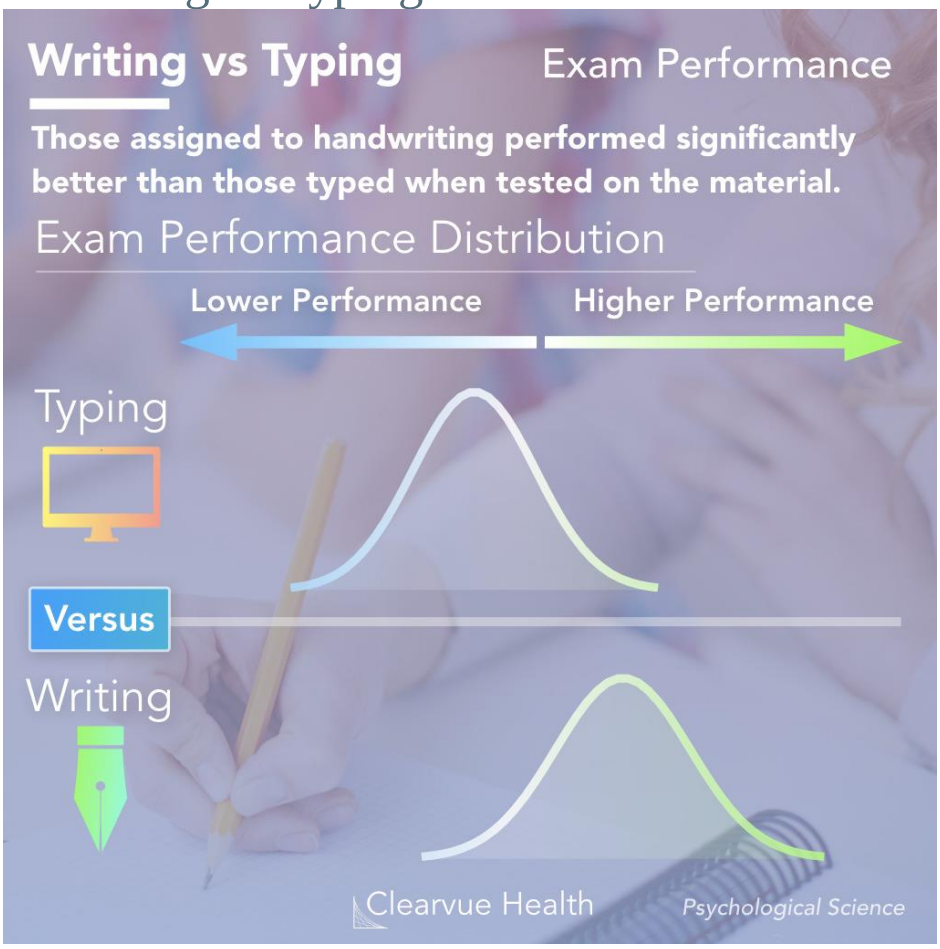
If you're goal is to take down many pages of notes, then typing is the clear winner. However, which is better for learning?

The researchers found that writing notes led to significantly more short-term retention. When the students were tested to see whether they remembered what they wrote down, students who wrote their notes remembered more than typing.

Writing notes does indeed lead to better learning.

Winner: Writing

Is Writing or Typing Better for Exam Performance



The final question, truly the only one that matters for students, is whether you do better on an exam when you type or when you write notes. Even though students who wrote notes had better recall, the students who typed notes had more notes to work with.

In order to test this, researchers had the students study the notes and return back for an exam on the material.

When they scored the exams, they found that the students who wrote their notes tended to score better on the exam on both conceptual and factual recall.

However, like the other data, there was a significant overlap between the two groups. The best students who typed their notes outperformed the average student who wrote their notes.

Winner: Writing

Conclusion: Should you type notes at all?

If you learn well typing, you absolutely should! The overlaps between the two groups was large for almost every metric studied. The performance of the student mattered more than how they took notes. Therefore, we recommend that students should stick with what they do best.
But, if you're on the fence, consider writing. It's low tech, it can be ugly for those with terrible handwriting, and it's pretty slow. But, in the end, you may just end up learning more.

If you do decide to type notes, this study did have some helpful findings:

1 - **Think as you type**: One of the best predictors of learning was low word overlap. The more you think, paraphrase, and process the notes as you type, the better you learn.

2 - **Slow Down**: Writing more notes was not necessarily better. Be sure to slow down, and make sure you have all the key points. It's more important to think about what you're writing than to write a ton of notes.

3 - **Study**: While we didn't show the data, studying is really the most important factor. Notes are just notes. If you want to learn something, be sure to practice it.
Professor Danny Oppenheimer, one of the authors of the paper, kindly offered the following insight:

"I think the take home message here isn't that somebody should never take notes on a laptop, but rather that the technology you use impacts the way you think and learn. It shouldn't be taken for granted that tech is always good, or always bad, but rather we should be thoughtful about the tech we adopt, and consciously consider the ways it might interact with our goals for the experience. Being deliberative in our use of technology will become increasingly important as cognitively enhancing technology becomes more prevalent."

Professor Danny Oppenheimer

Updated 7/11/2019: We added a quote from Professor Oppenheimer, one of the authors of the paper.