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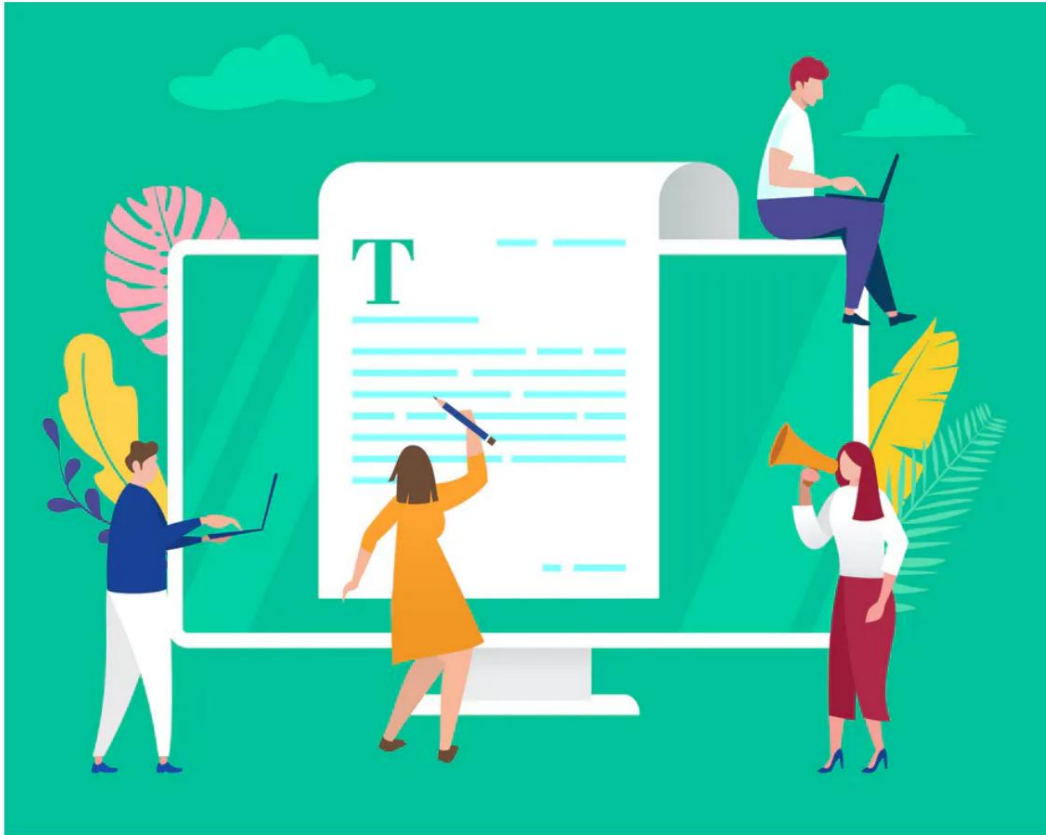
Academic rigor, journalistic flair

Pens or keyboards: which tools to choose for taking notes?

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Allowing an initial selection of information, taking notes is a step in the memorization of a lesson. Shutterstock

The pandemic that we have been experiencing for almost two years now has upset teaching practices. Distance courses have multiplied, many schoolchildren, high school students and students have had to work more alone, often without support from teachers or their families. Educational inequalities have thus been accentuated.

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In this context, the students who succeed best are those who have a range of techniques and skills allowing them to mobilize all their knowledge to follow courses of often degraded quality or to read the documents on their own.

Note taking is one of those essential techniques for academic learning: it is indeed impossible to memorize everything we hear from the first listen or to memorize everything we read. Students must therefore, on the one hand, select the most useful and relevant information in their courses and, on the other hand, keep a permanent record of it. The notes are, in fact, an external memory that they can consult at any time to work and revise their courses.

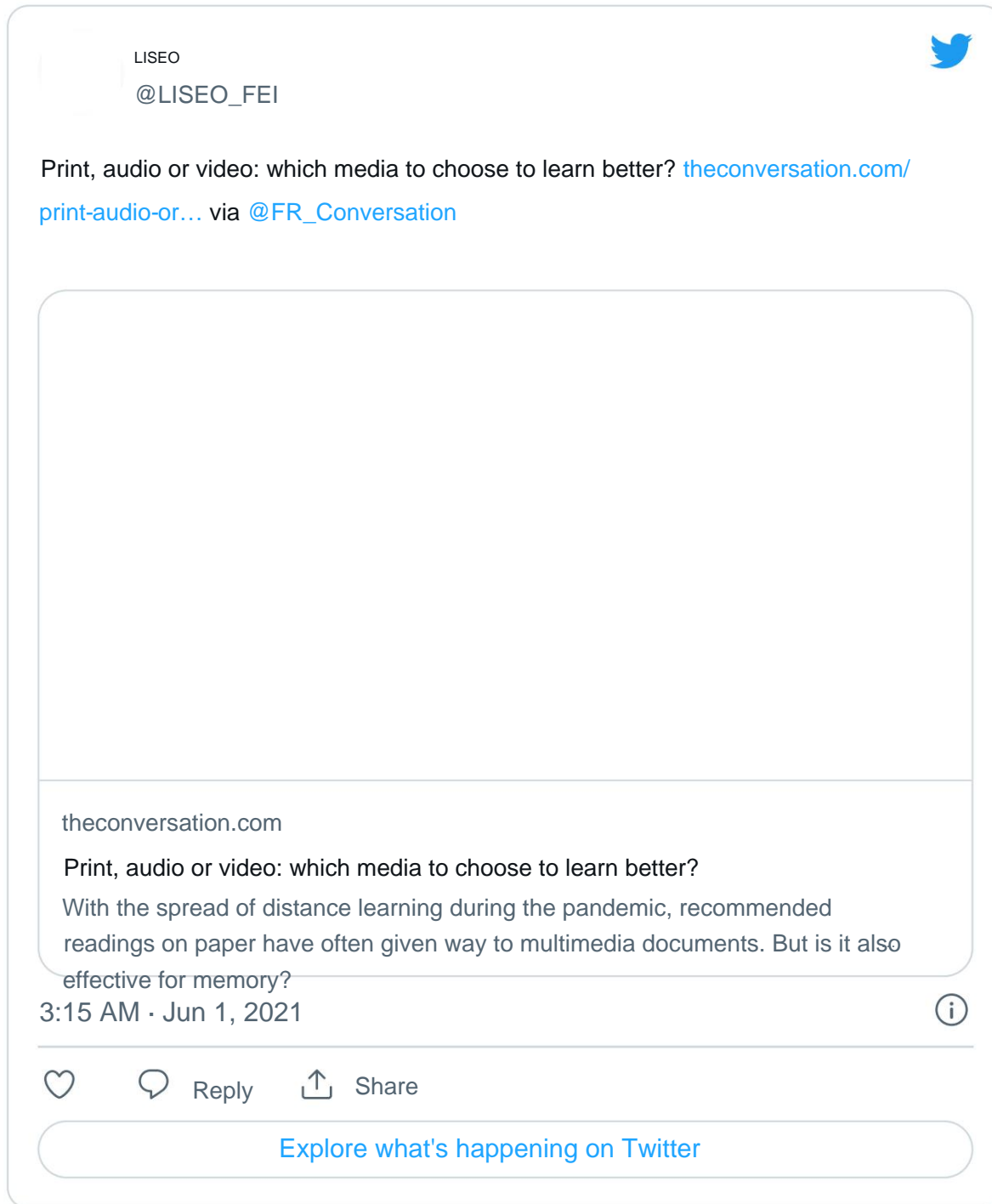
Organizational issues

Most students believe that taking notes is a major contributor to their success. Numerous scientific works have shown that taking notes does indeed improve academic results.

Of course, several note-taking techniques exist (from word-for-word copying to organized in matrices for example) and some are more effective than others. The most effective allow you to better understand the content of the courses. They also contribute to better memorization, and in the longer term, of new knowledge acquired.

Read more: Students: seven tips for taking better notes in class

Indeed, the quality of the processing which is carried out by the student on the information given by the teachers depends directly on the note-taking technique: the more this technique favors a deep processing, that is to say of the meaning of the statements, the better the memorization and understanding of the course. Therefore, techniques that promote organization, prioritization, and reformulation of content generally lead to better results.



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Unfortunately for students, taking notes, ie listening, understanding and noting simultaneously, leads to a very high mental load. Also, caught both in the urgency of taking notes and in a fear of forgetting part of the course, they often favor simple techniques that favor the quantity of notes rather than the organization and hierarchy of content.

Advancement of digital tools

Beyond note-taking techniques, which are rarely taught, the writing tools used by students contribute to effective note taking? Does it make any difference to take notes with a keyboard rather than a pen? A teacher facing an amphitheater can only notice the multitude of screens and tablets available to view.

A survey of 700 students at the University of Poitiers shows that 90% of students questioned said they used paper and pen and around 60% also used a computer. Tablets are used very little (less than 5%) and less than smartphones (which are used especially to photograph the slideshows projected by the teachers).

In a more recent survey carried out for her thesis among 240 students from various disciplines, one of my doctoral students, Marie Lebrisse, observes that nearly 90% of the students questioned declare that they use a computer to take notes and as many also declare that they use a pen. and the paper.

These surveys also show that the use of a computer depends on the disciplines: those which are essentially based on the transmission of the teacher's discourse favor taking notes on the keyboard. It is indeed difficult to make diagrams, diagrams, to write down equations with a keyboard and a mouse ! Also, lessons in scientific or technical disciplines, for example, tend to lead to handwritten notes.

Handwritten note-taking remains more common in scientific disciplines, when it comes to writing equations, for example. Shutterstock

Finally, students say they prefer to take notes with a computer because their notes are well presented and are therefore easier to read and revise but also for the speed of typing in keyboard. They are thus (re)assured not to forget important points of the course.

Effects still much debated

The effects of writing tools on note-taking are multiple and difficult to grasp: the slippery surface of tablets, the maneuverability of mice, the various options offered by the applications used with computers, or the size of screens, are all factors that affect performance and all obstacles (or aids, depending on the situation) for raters. For example, a poor mastery of typing on the keyboard results in a deteriorated memorization of information retranscribes.

Over the past decade, several studies have attempted to better understand computer note taking.

In a study by Mueller and Oppenheimer published in 2014, college students were asked to take handwritten or keyboard notes from 30-minute video lectures. The

authors tested the hypothesis that the speed of keyboard typing – which leads students towards more linear note-taking, aiming to jot down as many of the words of the teacher's speech as possible, but processing it less from the point of view of its meaning – should lead to lower recall.

They did not observe a difference according to the tool on the recall of precise information which is present in the video. On the other hand, they observed a benefit of handwritten note-taking on the recall of information reflecting student understanding.

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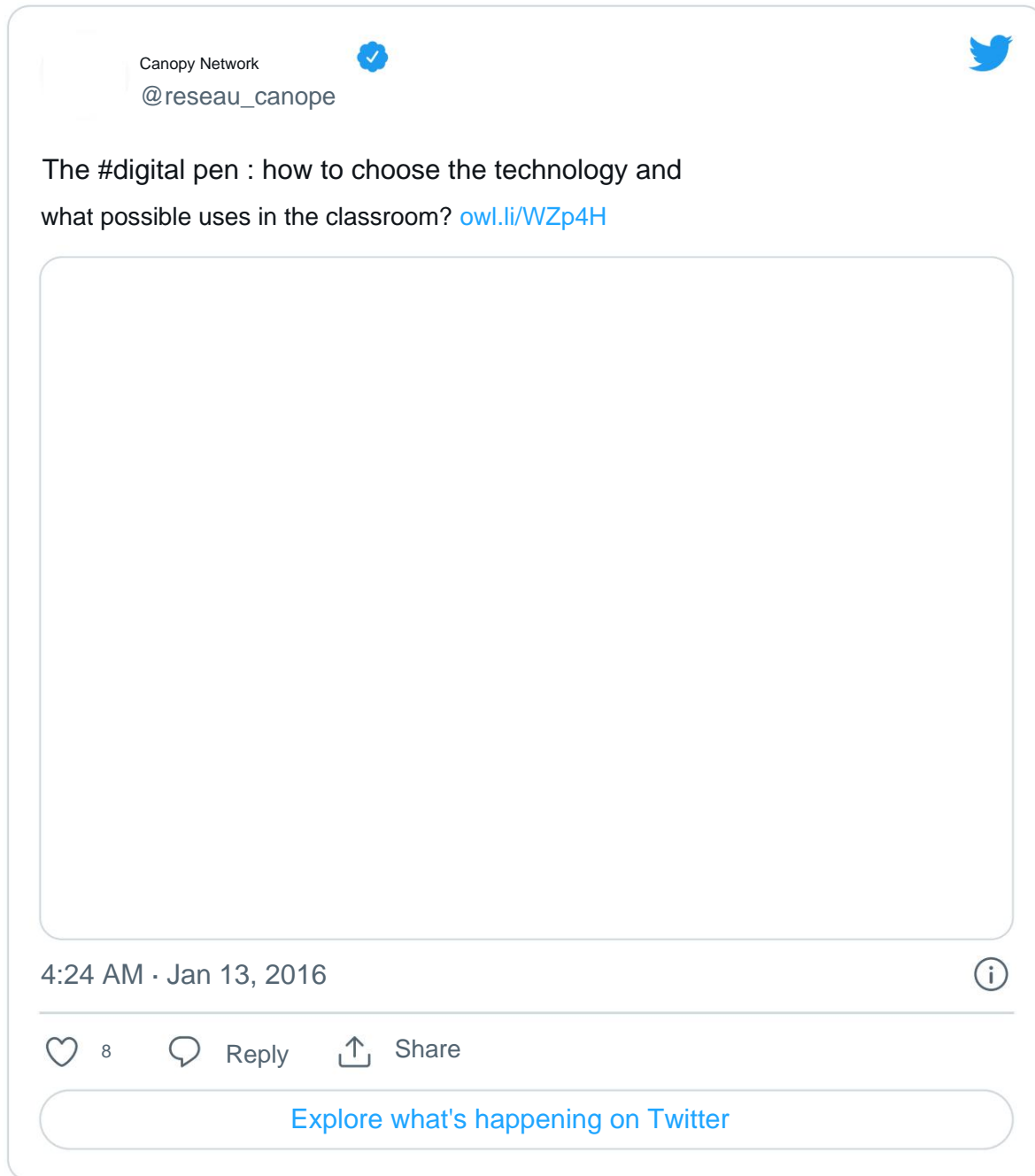
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Other studies have also observed less organized and more linear notes with a keyboard, but, this time, better memorization following note taking with a computer. It is therefore difficult to draw conclusions from studies published to date, as some studies differ. However, a recent meta-analysis (the simultaneous analysis of the results of several studies) does not seem to show negative effect of the use of a computer on the memorization of the noted information.

Uses to support

Other technologies than the keyboard and the computer exist for taking notes: we can cite tablets with external keyboards, virtual or even with styluses, and smartpens, these digital pens that record and digitize the written trace they produce. . These two types of tools are therefore based on handwritten note taking and offer digital tool options (e.g. handwriting recognition).

In her thesis, Marie Lebrisse studied note-taking on a tablet with a note-taking application including software for recognizing writing drawn with a stylus. His work indicates that taking notes on a tablet is closer to taking notes on paper. The work that analyzed the eWriter tablets, tablets specifically dedicated to taking notes and writing, led to similar results.



The use of digital pens for taking notes is also an avenue to explore. These pens have the advantage of being able to save not only the handwriting but also the lessons given by synchronizing them with the written notes. Joseph Boyle, Temple University, Philadelphia, has conducted several studies on the use of these tools for students presenting learning difficulties. It clearly shows how the use of electronic pens can help these students.

To conclude, while several studies show the limits of digital tools for taking notes, many also point to their potential for academic success. But their use should be accompanied so that they bring benefits to the students. Without proper training and a lasting support, they can end up being little more than gimmicks...