EDITORIAL

Read less, learn more. Teach epistemic humility.

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Abstract: Read less, learn more, sounds contradictory. I do not mean students should read less in general. PISA research (OECD, 2023) shows decreasing reading scores in many European countries, and reading literature is not only important for one's reading competence, it also is fun. What I mean is what psychologist and philosopher William James already wrote in 1890: ¨*The art of being wise is the art of knowing what to overlook*¨ (James, 1890).

Information is everywhere and always available. Internet technology makes it accessible, no matter where students are and when students want to get access to it. But online information can be low-quality and misleading hijacking students' attention. Students face an endless stream of appeals scrolling through social media. There are news articles to pass on, TikTok clips to watch, social media posts to like, tweets to retweet. However, the website's authors may not be its author. References that demonstrate legitimacy may have little to do with the claims made. Video clips may have been artificially created to solicit donations and signatures on petitions. This means that students must evaluate the available online information to deal with overabundant and attention-grabbing information. Investing efforts in sources that should have been ignored in the first place means that students' attention has already been taken.

Students' evaluation of online information

Researchers have studied how students deploy heuristics -practical strategies or rules of thumb- to decide what websites to trust distinguishing between effective and weak heuristics. Effective heuristics allow students to ignore information and weak heuristics rely on surface features such as a site's layout or URL. Weak heuristics seem to save time but often lead to dubious conclusions (Breakstone et al., 2021; Wineburg & McGrew, 2016). Across educational contexts, studies have shown that students rely on weak heuristics to make judgments of the credibility of online sources, evaluating features such as a site's look, objective-sounding language, scientific references, and links to prestigious outlets (see, e.g., Bakke, 2020; Lurie & Mustafarai, 2018; McGrew et al., 2018). In the study of Breakstone and colleagues (Breakstone et al., 2021), the authors asked 3,446 high school students to evaluate websites using a live Internet connection. The authors of one of the sites, which was about denying humans' role in global warming, were connected to the fossil fuel industry. Yet,

96% of the students did not uncover this connection as they based their site's evaluation on surface features.

But how do experts evaluate digital content? In a study by Wineburg & McGrew (2019), three groups of experienced Internet users judged the credibility of unfamiliar websites: undergraduates from Stanford University, professional historians from five different universities, and professional fact-checkers at the nation's most prestigious news outlets. Historians and college students used weak heuristics, such as screening official-looking logos and domain names. They approached websites vertically, reading from top to bottom, and spending time examining features within a site. In contrast, fact-checkers deployed the heuristic of *lateral reading*. Instead of first examining a site's internal features, they evaluated unfamiliar sites by leaving them and using the web to read about the site. By reading laterally, fact-checkers reached more warranted conclusions in less time than the other two groups (Wineburg & McGrew, 2019).

The use of effective heuristics

Wineburg and colleagues (Wineburg et al., 2022) posited that three related constructs were responsible for the success of fact-checkers in their earlier study: footing, taking bearings, and lateral reading. *Footing* refers to the understanding of how the Internet and online searches work, and discounting weak heuristics being aware that online sources might be manipulated. *Taking bearings* is about having a sense of direction when starting an online search and applying fast heuristics to get an idea of the content. Included in this strategy are the heuristics *click restraint* -holding back the urge to click a search result until one surveys the adjacent results-, *result mining* – extracting clues from the brief excerpts that accompany each result-, and *critical ignoring* – passing over low-quality results. *Lateral reading* is the act of leaving an unfamiliar website to search the web and opening new tabs to investigate the organization or individual behind the original site. Lateral reading postpones an investment of attention until first determining that such an investment merits the effort. Lateral reading begins with a key insight: One cannot necessarily know how trustworthy a website or a social-media post is by just engaging with and critically reflecting on its content. Lateral reading requires *epistemic humility*, which is the willingness to admit that one may be wrong and not know everything, knowing one's limits, and approaching knowledge with a sense of wonder and curiosity rather than rigid certainty.

Besides lateral reading, Kozyreva and colleagues (Kozyreva et al., 2023) presented two other strategies to deal with different types of problematic information, such as distracting information, misinformation, and disinformation. First, *self-nudging* refers to competencies to design one's environment in a way that works best by, for example, removing distracting and hard-to-resist stimuli, setting time limits or not rewarding the use of distractions. Second, *ignoring malicious actors* refers to

ignoring the people who produce information, not the information itself. In many cases, problematic online behavior including the production of disinformation and harassment can usually traced back to just a few extremely active individuals. An effective response is to resist engaging with these individuals and their claims by ignoring them. This strategy is also known as the do-not-feed-the-trolls heuristic (Craker & March, 2016): 1) do not respond directly to trolls, and do not correct them, engage in debate, retaliate or troll in response, and 2) block trolls and report them to the platform.

Critical ignoring is underlying many effective heuristics in searching for online information. It refers to choosing what to ignore, learning how to resist low-quality and misleading but cognitively attractive information, and deciding where to invest their limited attentional capacities (Kozyreva et al., 2022; Wineburg, 2021). However, learning to ignore information is not something taught in school. School teaches the opposite: to read a text thoroughly and closely before evaluating it.

Evaluating online information in school

Although the evaluation of online information is taught in school, it is mostly done at the end of the instruction, AFTER the information has been collected. McGrew et al. (2019) showed that brief interventions, based on the strategies of professional fact-checkers, improved students' ability to judge digital content – in some cases in as little as 150 minutes of instruction. Wineburg et al. (2022) took this a step further and examined how these brief interventions can be integrated into the school curriculum and whether high school students would improve as evaluators of online content by completing six 50-minute lessons taught by their teachers. Using a pre-test post-test group design, the authors showed students in the experimental classrooms grew significantly in their ability to judge the credibility of digital content.

Today's high school students have at their disposal an array of digital tools and online information, which are rich sources for learning and development as well as an unpredictable mix of true, fake, and out-of-context information. How do students know what to trust, what to share, and what to flag to platforms? The rapid developments in Artificial Intelligence make this question even more urgent. How, in a digital society, do students become well-informed without becoming overwhelmed?
In thinking about how this might be achieved, Wineburg and colleagues (Wineburg et al., 2022) concluded that the curricular approach should go a different path than the core subject matter courses that prepare students for further academic study. What the authors called Civic Online Reasoning throughout the curriculum recognizes that the informed citizen is a generalist with gaps in background knowledge who must make "good enough" decisions under real-world constraints. We should teach students epistemic humility.

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