Critical ignoring as a core competence for digital citizens

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Abstract:

Low-quality and misleading information online can hijack people’s attention, often by evoking curiosity, outrage or anger. Resisting certain types of information and actors online requires people to adopt new mental habits that help them avoid being tempted by attention-grabbing and potentially harmful content. We argue that digital information literacy must include the competence of “critical ignoring”—choosing what to ignore and where to invest one’s limited attentional capacities. We review three types of cognitive strategies for implementing critical ignoring: self-nudging, in which people ignore temptations by removing them from their digital environments; lateral reading, which requires users to vet information by leaving the source and verifying its credibility elsewhere online; and the “do not feed the trolls” heuristic, which advises people to not reward malicious actors with attention. We argue that these strategies implementing critical ignoring should be part of school curricula on digital information literacy. Teaching the competence of critical ignoring requires a paradigm shift in educators’ thinking, from a sole focus on the power and promise of paying close attention to an additional emphasis on the power of ignoring. Encouraging students and other online users to embrace critical ignoring can empower them to shield themselves from the excesses, traps, and information disorders of today’s attention economy.

Keywords: critical ignoring; deliberate ignorance; lateral reading; online environments; digital information literacy, critical thinking, information management
Introduction

A wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it. (Simon, 1971, pp. 40–41)

[...] the function of ignoring, of inattention, is as vital a factor in mental progress as the function of attention itself. (James, 1904, p. 371)

The digital world is artificially constructed. Moderated by algorithmic tools, it contains more information than the world’s libraries combined—but much of this information comes from unvetted sources and lacks conventional indicators of trustworthiness. A person scrolling through their social media feeds is confronted with a deluge of updates and messages—an ad for a new device, a meme from a friend, news about the pandemic, and opinions on anything from climate change to the latest celebrity misstep—all in an endless stream produced and shared by human beings and promoted by algorithms designed to make us dwell on the platform so we can be exposed to more ads (Wu, 2016).

The challenges of dealing with overabundant and attention-grabbing information are amplified by the proliferation of false information and conspiracy theories, whose prevalence may lead people to doubt the very existence of “truth” or a shared reality. An entirely new vocabulary has become necessary to describe disinformation and online harassment tactics, such as flooding, trolling, JAQing, or sealioning.¹ These tactics generate an excess of contradictory and irrelevant

¹ We use the term misinformation to refer to any information that later turns out to have been false. We reserve the term disinformation to refer to messages that the communicator knows to be false but is disseminating for political or personal purposes. Flooding consists of inundating online spaces with a torrent of messages to dominate and disrupt conversation and drown out dissenting voices. Trolling is a form of online harassment that involves posting provocative and inflammatory messages in order to disrupt the conversation and upset others. Sealioning is a type of trolling and a harassment tactic of pestering participants of online discussions with disingenuous questions and incessant requests for evidence under the guise of sincerity. Similarly, JAQing (“just asking questions”) is a tactic of disingenuously framing false or misleading statements as questions.
information in order to instill doubt, undermine a shared perception of reality, or simply distract (Lewandowsky, 2020; Kozyreva et al., 2020).

To counteract the challenges of false and misleading information and other attention-grabbing traps online, policy work has taken a multi-pronged approach, ranging from content moderation to fact checking and introduction of friction (Lewandowsky et al., 2020). In addition, research has focused on preparing people to recognize and resist online manipulation and disinformation, including both pre-emptive (‘inoculation’) and reactive (‘debunking’) interventions (Ecker et al., 2022), and on improving people’s competences for media and information literacy (e.g., Wineburg et al., 2022). Much effort has sought to repurpose the notion of critical thinking, that is, “thinking that is purposeful, reasoned, and goal directed” (Halpern, 2013, p. 8) from its origins in education to the online world. For example, Zucker (2019), addressing the National Science Teachers Association, wrote that because of the flood of misinformation “it is imperative that science teachers help students use critical thinking to examine claims they see, hear, or read that are not based on science” (p. 6).

As important as the ability to think critically continues to be, we argue that it is insufficient to borrow the tools developed for offline environments and apply them to the digital world. When the world comes to us filtered through digital devices, we no longer need to decide what information to seek. Instead, the relentless stream of information has turned human attention into a scarce resource to be seized and exploited by advertisers and content providers. Investing effortful and conscious critical thinking in sources that should have been ignored in the first place means that one’s attention has already been expropriated (Caulfield, 2018). A crucial part of digital literacy and critical thinking must therefore cultivate the competence of critical ignoring: choosing what to ignore, learning how to resist low-quality and misleading but
'cognitively attractive’ information, and deciding where to invest one’s limited attentional capacities.

**Information Selection in the Attention Economy**

Being selective about available information is at the heart of human cognition. Virtually any time people process a stimulus, they do so only because they are ignoring multiple competing stimuli. On a level of perceptual processing, our minds must ignore irrelevant sensory information in order to focus on important objects in a continually changing environment (Gaspar & McDonald, 2014). Our general ability to perform cognitive tasks, drawing on our working memory capacity, is related to the ability to suppress irrelevant distractors (Gaspar et al., 2016). Ignoring information is also a distinctive feature of decision making of a boundedly rational mind (Simon, 1990). A key class of decision-making strategies are heuristic strategies. Their nature is to ignore “part of the information with the goal of making decisions more quickly, frugally, and/or accurately than more complex methods” (Gigerenzer & Gassmaier, 2011, p. 454).²

Information selection is mediated through our physical and social environments and their cues that signal, among other things, danger, reward, or emotional states of other people. Being attuned to these valuable signals (and ignoring what is essentially irrelevant) is crucial for efficient functioning of any biological or artificial agent with limited resources (Simon, 1990). Ideally, our cognitive tools for separating valuable from to-be-ignored information are adapted to the environments we operate in. However, our long-standing evolved, learned, and taught tools

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² For example, the *take-the-best* heuristic models how people infer which of two alternatives has a higher value on a criterion, based on binary cues and cue values retrieved from memory. It assumes that search proceeds through cues in order of their validity. Selection is implemented in terms of the stopping rule: The heuristic stops on finding the first cue that discriminates between the alternatives. The heuristic thus uses the single most predictive and discriminative cue for a task (e.g., a friend’s recommendation for which of two restaurants has the best food) and ignores the rest (e.g., price, ranking, cuisine type).
for information selection may be inadequate in the digital world, where the power of information filtering and control over environmental signals mainly rests with platforms that curate content through a combination of algorithmic tools and choice architectures.

For instance, in the world of small social groups in which we have evolved, paying attention to surprising or emotionally charged information is important, because it usually signals potential dangers or rewards. However, online, the same cues and attention markers that indicate important information in a social group can be misused by content generators to attract attention to falsehoods and tempt people into spreading them. Indeed, Vosoughi et al. (2018) found that false stories that “successfully” turned viral were likely to inspire fear, disgust, and surprise; true stories, in contrast, triggered anticipation, sadness, joy, and trust. The human proclivity to attend more to negative than to positive things (Soroka et al., 2019) may explain why messages featuring moral–emotional language are more likely to be shared (Brady et al., 2017). Unscrupulous content generators can exploit this bias and can continually refine their messages by monitoring the “success” (measured by engagement and sharing) of different versions—a facility known as “A/B testing” that is at the heart of Facebook’s advertising system. Misleading and low quality information becomes an even more profound risk when it is part of a targeted campaign. The “infodemic” of misinformation and calculated disinformation around COVID-19 not only pollutes the Web with false and dubious information, it also undermines citizens’ health literacy, fosters vaccine hesitancy, and cultivates detrimental outcomes for individuals and society. The “infodemic” is non-trivial because exposure to misinformation has

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3 See Meta (n.d.) About A/B testing. 
https://www.facebook.com/business/help/1738164643098669?id=445653312788501
been shown to reduce people’s intention to be vaccinated against COVID-19 (Loomba et al., 2021).

Importantly, such harmful content, although it might be shared and embraced by a part of the public, originates from malicious actors who are motivated by a variety of factors, including financial, ideological, and lobbying interests (e.g., climate denial is a concentrated effort; Oreskes & Conway, 2011). Malicious actors also use trolling and harassment tactics to intimidate and silence opposing voices. Beyond harmful misinformation and online harassment, competition for attention creates an overabundance of content that, while not necessarily harmful in itself, can negatively affect other important indicators of life quality, such as time and well-being.

In sum, digital environments present new challenges to our cognition and attention. People must therefore develop new mental habits, or retool those from other domains, to prevent merchants of low-quality information from hijacking our cognitive resources. One key such competence is the ability to deliberately and strategically ignore information.

**Critical Ignoring for Information Management**

*Deliberate ignorance* refers to the conscious choice to ignore information even when the costs of obtaining it are negligible (Hertwig & Engel, 2016). People deliberately ignore information for various reasons—for instance, to avoid anticipated negative emotions, to ensure fairness, or to maximize suspense and surprise. Deliberate ignorance can also be a tool for boosting information management, especially online (Kozyreva et al., 2020). Critical ignoring (Wineburg, 2021) is a type of deliberate ignorance that entails selectively filtering and blocking out information in order to control one’s information environment and reduce one’s exposure to false and low-quality information. This competence complements conventional critical thinking and
information literacy skills, such as finding reliable information online, by specifying how to avoid information that is misleading, distracting, and potentially harmful. It is only by ignoring the torrent of low-quality information that people can focus on applying critical search skills to the remaining now-manageable pool of potentially relevant information. Critical ignoring, like all types of deliberate ignorance, requires cognitive and motivational resources (e.g., executive control) and, somewhat ironically, knowledge: In order to know what to ignore, a person must first understand and detect the warning signs of low trustworthiness.

**Critical Ignoring in the Digital World: Information Types and Tools**

What are strategies for implementing critical ignoring? Different types of problematic information – such as distracting information, misinformation, disinformation and interference by malicious actors – may require different mitigation strategies. We discuss three strategies—self-nudging, lateral reading, and the “do not feed the trolls” heuristic—and the circumstances in which they can be applied (see Fig. 1).

**Figure 1**

*Critical Ignoring Online: Types of Information, Outcomes, and Strategies*
Self-Nudging: Removing Distracting and Low-Quality Information

Clickbait stories ("Ebola in the Air? A Nightmare That Could Happen"), emotional and sensational content, “breaking news”—the various forms of low-quality information are as tempting to our attentional system as junk food is to our taste buds. The key to controlling addictive habits—whether cutting out online gossip or sugary treats—is not to exercise superhuman willpower but rather to employ situational control strategies (Duckworth et al., 2018). This involves making changes to one’s environment in order to manage exposure to temptation. For instance, if someone cannot resist sweets, they can make them less accessible—

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4 According to Duckworth et al (2018), situational self-control strategies include situation-selection strategies that “involve intentionally choosing to be in situations that favor goal-oriented valuation systems over temptation-oriented valuation systems” (p. 40) and situation-modification strategies that “entail purposefully changing our circumstances to advantage” (p. 40). Duckworth et al (2018) provide both a theoretical framework and an overview of the available evidence supporting situational self-control strategies in the domains of substance use, eating and exercise, studying and academic work, and retirement savings.
putting them at the back of the hardest to reach shelf—to help control their urges. The same rationale can be harnessed for an information diet.

Self-nudging is a cognitive boost (Hertwig & Grüne-Yanoff, 2017) that fosters people’s competences to design their environment in a way that works best for them. Self-nudging has roots in research on a behavioral policy approach called nudging (Thaler & Sunstein, 2008) and psychological research on situational self-control (Duckworth et al., 2018). Self-nudging is like conventional nudging. Using extensively studied mechanisms of interventions such as positional effects, defaults, friction or social norms, the self-nudger redesigns choice architectures to prompt a behavioral change. However, instead of requiring a public choice architect, self-nudging seeks to empower people to change their own environments (Reijula & Hertwig, 2022), thus making them into citizen choice architects whose autonomy and agency is preserved and fostered.

To deal with attention-grabbing information online, people can apply self-nudging principles to organize their information environment so as to reduce temptation. For instance, digital self-nudges, such as setting time limits on the use of social media (e.g., via the Screen Time app on iPhone) or converting one’s screen to a grayscale mode, have been demonstrated to help people reduce their screen time (Zimmermann & Sobolev, 2020). A more radical self-nudge consists in removing temptations by deactivating the most distracting social media apps (at least for a period of time). In a study by Alcott et al. (2020), participants who were incentivized to deactivate their Facebook accounts for 1 month gained on average about 60 minutes per day for offline activities, a gain that was associated with small increases in subjective well-being. Reduced online activity also modestly decreased factual knowledge of political news (but not political participation) as well as political polarization (but not affective polarization). As this study shows, there are trade-
offs between potential gains (e.g., time for offline activities) and losses (e.g., potentially becoming less informed) in such solutions. The key goal of self-nudging, however, is not to optimize information consumption, but rather to offer a range of measures that can help people regain control of their information environments and align them with their goals, including how to distribute one’s time and attention between different competing sources (e.g., friends on social media and friends and family offline).

**Lateral Reading: Verifying Credibility on the Web**

Organized disinformation or misleading information that masquerades as legitimate is difficult to ignore, especially when it comes from political leaders and celebrities. Sources that disseminate such information adopt easily gamed indicators of epistemic quality, such as official-looking logos, scientific language, and top-level domains (e.g., dot.org; Wineburg & Ziv, 2019) in order to appear trustworthy. Other tricks include adding hyperlinks to reliable sources that look dependable enough to mask the fact that the source does not actually support the claim being made (Breakstone et al., 2022).

In a digital environment, looks can be deceiving. It is often impossible to know the real agenda behind a site or a post simply by examining it—the trick is to not waste time doing so. Instead, a person can follow the strategy of professional fact-checkers known as *lateral reading* (Wineburg & McGrew, 2019; Wineburg et al., 2022). Lateral reading begins with a key insight: One cannot necessarily know how trustworthy a website or a social media post is by engaging with and critically reflecting on its content. Without relevant background knowledge or reliable indicators of trustworthiness, the best strategy for deciding whether one can believe a source is to look up the author/organization and the claims elsewhere (e.g., using search engines or Wikipedia to get
pointers to reliable sources). The strategy of lateral reading comes from studying what makes professional fact checkers successful in verifying information on the web compared to other competent adults — undergraduates at an elite university and PhD historians from five different universities (Wineburg & McGrew, 2019). Instead of dwelling on an unfamiliar site and reading “vertically”, fact checkers strategically and deliberately ignored it until they first opened new tabs to search for information about the organization or individual behind the original site. If lateral reading indicates that the site is untrustworthy, examining it directly wastes precious time and energy. Although this strategy might require motivation and time to learn and practice, it is a time-saver in the long run. In Wineburg and McGrew’s (2019) study, fact checkers only needed a few seconds to determine trustworthiness of the source.

Lateral reading is part of the Civic Online Reasoning curriculum, whose effectiveness has been demonstrated in multiple studies (Axelsson, et al., 2021; Brodsky et al., 2021; McGrew et al., 2019; Wineburg et al., 2022). For instance, in a recent field experiment across an entire urban school district in the U.S., Wineburg et al. (2022) showed that, after completing six 50-minutes lessons focusing on lateral reading and related strategies, students’ (n = 271) ability to judge the credibility of digital content grew significantly, relative to students in a control group (n = 228). Panizza et al. (2022), testing adults, also demonstrated that lateral reading can improve accuracy discernment in evaluating unfamiliar sources when implemented as a quick pop-up on a social media website.

“Do Not Feed the Trolls”: Ignoring Malicious Actors

Sometimes it is not the information, but those who produce it who need to be actively ignored. Problematic online behavior, including disinformation and harassment, can usually be traced
back to real people—more often than not to just a few extremely active individuals. Indeed, close to 65% of anti-vaccine content posted to Facebook and Twitter in February and March 2021 is attributable to just 12 individuals (Center for Countering Digital Hate, 2021).

Despite being a minority, conspiracy theorists and science denialists can be vocal enough to cause damage. Their strategy is to consume people’s attention by creating the appearance of a debate where none exists (e.g., Oreskes & Conway, 2011). One productive response is to resist engaging with these individuals or their claims by ignoring them. This approach can be implemented both on the individual and the infrastructural level. For instance, the AskHistorians subreddit, one of the largest history forums online, removes questions that use the “just asking questions” (JAQ) technique to deny the basic facts of the Holocaust (Breit, 2018).

Another category of bad actors online are those engaged in trolling, cyberbullying, and online harassment. Harassment—including physical threats, stalking, insults, and sexual harassment—is prevalent online, with 41% of Americans saying that they personally have experienced at least one form of such abuse (Vogels, 2021). Trolling, which includes interpersonal anti-social behaviors, such as deception, aggression, and disruption, is a particularly common and concerning type of online harassment (Craker & March, 2016).

Online trolling and harassment exact an emotional toll on victims and erode online civility. Crucially, as Craker and March (2016) demonstrated, individuals who engage in trolling are motivated by negative social power, and their trolling behavior is reinforced by the adverse impact their actions have (e.g., annoying and upsetting people). To fight back, as one of the authors of this study (March, 2016) argued, one needs to withdraw that negative social reward, thereby diminishing trolls’ motivation to engage in antisocial behavior. This strategy is known as
the “do not feed the trolls” heuristic. It consists of two rules: When exposed to antisocial and
toxic behavior online, (1) do not respond directly to harassment or trolling—do not correct,
debate, retaliate, or troll in response. (2) Instead, block trolls and report them to the platform.

Another support for the use of this heuristic comes from the expert advice emphasizing the
importance of two factors when dealing with online trolling and harassment: (1) seeking help and
support from one’s social group and/or professionals; (2) not engaging with the malicious actors
and blocking their messages. For example, UNICEF advises that, when bullying happens on a
social media platform, one should “consider blocking the bully and formally reporting their
behavior on the platform itself” (UNICEF, n.d.).

Finally, it is important to note that no one can—or should—bear the burden of online abuse and
disinformation alone. The “do not feed the trolls” heuristic must be complemented by reporting
and consistent moderation policies. It is also crucial to ensure that trolling and flooding tactics of
science denialists are not left without response on the platform level. Platforms’ content
moderation policies and design choices should be the first line of defense against harmful online
behavior. Strategies and interventions aimed to foster critical thinking and critical ignoring
competences in online users should not be regarded as a substitute for developing and
implementing systemic and infrastructural solutions on the level of platforms and regulators.
Empowering individuals and fostering better digital competences is part of the defense against
online harm; it must not be allowed to be misused by regulators and platforms as an alibi for
doing nothing.
Critical Ignoring as a New Paradigm for Education

The digital world’s attention economy, the presence of malicious actors, and the ubiquity of alluring but false or misleading information presents users with cognitive, emotional, and motivational challenges. Mastering these challenges will require new competences. An indispensable component of navigating online information and preserving one’s autonomy on the internet is the ability to ignore large amounts of information. Critical ignoring strategies, as part of a curriculum in “information management,” should therefore be included in school curricula.

Traditionally, the search for knowledge has involved paying close attention to information—finding it and considering it from multiple angles. Reading a text from beginning to end to critically evaluate it is a sensible approach to vetted school texts approved by competent overseers. On the unvetted internet, however, it often ends up being a colossal waste of time and energy. In an era in which attention is the new currency, “paying careful attention” is precisely what attention merchants and malicious agents exploit. It is time to revisit and expand the concept of critical thinking, often seen as the bedrock of an informed citizenry. As long as students are led to believe that critical thinking requires above all the effortful processing of text, they will continue to fall prey to informational traps and manipulated signals of epistemic quality. Next to critical thinking, students should learn the core competence of thoughtfully and strategically allocating their attentional resources online. This will often entail selecting a few valuable pieces of information and deliberately ignoring others (Hertwig & Engel, 2016). This insight, while crucial to the digital age, is not new. As William James (1904) observed: “The art of being wise is the art of knowing what to overlook” (p. 369).
Recommended Reading


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