Embracing mindful reading: leveraging technology to soothe sensory stress

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Abstract

In an increasingly digitized world, technological advancements have transformed information consumption, introducing sensory stress. This review explores mindful reading as a strategy to alleviate this stress and enhance digital reading experiences by integrating technology and mindfulness practices. Mindful reading involves deliberate engagement, derived from mindfulness techniques, offering improved concentration and emotional regulation. Tools like Reader View and digital annotation features can help to reduce sensory strain and enhance readability. Educators play a vital role in supporting mindful reading by providing tailored resources for navigating digital formats and fostering reflective learning approaches. This review calls for further research on this topic to build our understanding of how to create a balanced coexistence between technology and human well-being in reading.

Introduction

In an increasingly digitized world, technological advancements have transformed the way we consume information. While these advancements offer unparalleled convenience and accessibility, they have also given rise to a phenomenon often overlooked: sensory stress (Mizrachi, 2015). This technology review discusses the concept of mindful reading as a strategy to alleviate sensory stress and enhance reading experiences. It explores technologies designed to support mindfulness practices, emphasizing their potential for fostering a harmonious relationship between readers and digital content; in doing so, it advocates for a mindful approach to digital reading that promotes relaxation as well as comprehension.

Academic reading has tended to be more neglected – in both scholarly literature and study materials – than academic writing. As Grabe (2008) asserts, reading is commonly perceived as a skill that can be taken for granted, overshadowed in academic discourse by the emphasis on writing skills; however, many important aspects of reading deserve consideration, particularly in the digital context.

Research by Delgado *et al*. (2018) found evidence that levels of comprehension during digital reading were lower than during non-digital reading. They proposed that the multi-tasking behaviours that people engage in when digital reading were responsible. This finding of "*screen inferiority*" applied to all age groups in their study – it was not restricted to those who were adapting to screen reading following many years of non-screen reading. However, research has not yet fully explored this phenomenon. Moreover, digital reading as a topic has not yet been fully explored from the student perspective (Baker *et al*., 2019). Consequently,

relevant knowledge that might guide readers to navigate digital content more effectively is lacking.

The digital landscape presents readers with a multitude of stimuli that can overwhelm the senses (Sandberg, 2011). Factors such as screen brightness, visual clutter, continual notifications and blue light emissions may all contribute to sensory stress. Research has shown that prolonged exposure to screens may lead to eye strain, fatigue and disruption to sleep patterns (Kaur *et al*., 2022). Furthermore, the constant stream of information may block concentration and cognitive processing, delaying the reader's ability to comprehend and retain information (Braasch *et al*., 2012).

Mindful reading involves the deliberate practice of being fully present and engaged whilst consuming written content (Wilhelm, 2016). It encompasses techniques derived from mindfulness, such as focused attention and non-judgmental awareness. By concentrating attention on the text and employing mindfulness strategies, individuals can cultivate a heightened sense of focus, clarity and emotional regulation during reading sessions (Aytac and Mizrachi, 2022).

Application

While technology can contribute to sensory stress, there is also potential for technology to relieve stress by facilitating mindful reading (Jarrahi, Blyth and Goray, 2023). Various devices and applications offer features that can reduce sensory strain, including adjustable screen settings and distraction-free reading modes. One example that can effectively simplify web content and minimize distractions is Reader View, available as a Chrome browser extension (Google, 2023a). This tool enables users to declutter web pages by removing unnecessary elements, adjusting font styles, sizes and background colours and organising text into a single column for easier reading. Several similar extensions are accessible through the Chrome web store, offering users a variety of options to tailor their browsing experience. Notably, certain journal sites like Taylor and Francis and Wiley incorporate a Reader Mode directly in the URL bar, streamlining the reading interface. Additionally, Postlight Reader, another Chrome extension, not only simplifies web pages but also facilitates the sending of content to Kindle, offering an alternative for those seeking respite from prolonged computer screen exposure (Google, 2023b).

Figure 1. Screenshot without Reader View (Author's own, 2024)

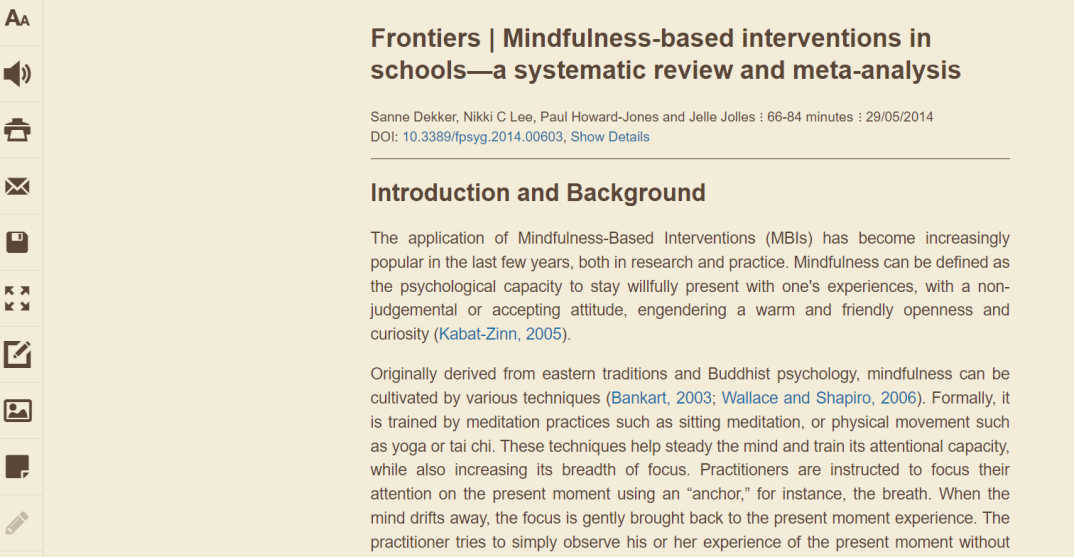

Figure 2. Screenshot with Reader View (Author's own, 2024)

Likewise, enhancing the readability of on-screen content can significantly improve the digital reading experience, as illustrated in figures 1 and 2. Using Reader View on websites offers the convenience of adjusting font size, colour, and background contrast. A lesser-known feature involves changing the default font size to a larger one via the internet browser settings. For example, in Chrome, these can be adjusted in the appearance section, under 'font size', or by exploring additional options in the 'customise fonts' tab (Google, 2023c). For individuals facing challenges with on-screen readability, especially those using high-resolution monitors, these adjustments may overcome difficulties in reading digital content.

As well as visual adjustments, digital annotation tools can also support the digital reading experience (Chen, Li and Chen, 2022). Features such as highlighting, underlining, colour coding and sticky notes, particularly with touch-screen interfaces and stylus pens, enable users to annotate downloaded texts with ease.

Evaluation

Focussing on digital annotation in particular, these tools allow for the editing of previous annotations and the ability to magnify documents containing notes, facilitating a customisable and comprehensive approach to annotations. In addition, the seamless sharing of annotations amongst peers enhances collaborative learning experiences (Gao, 2013). However, challenges exist, including the inability to annotate certain online texts owing to limitations in user interface design, as well as the impermanence of annotations on texts available for a limited duration. Despite the advantages of digital annotation, some students prefer handwritten notes, perceiving them as more convenient (Dahlström and Boström, 2017). Moreover, the requirement for specific software and devices, along with the need for digital proficiency, poses additional challenges to the effective application of these tools (Artz *et al*., 2020)

As educators, we can support students to embrace mindful reading and leverage technology to alleviate sensory stress. This could include tailored resources spanning three critical domains essential for academic success: navigating reading materials for studies, encompassing both digital and print formats; engaging with various forms of digital text; and honing reading and note-taking practices in the digital age. By incorporating a reflective approach, these resources can encourage students to contemplate their format preferences and determine the rationales behind their choices, thereby fostering a heightened awareness of individualised learning preferences (Mizrachi, 2015). Additionally, such a strategy can encourage familiarity with diverse digital text formats, empowering students to develop adaptive and effective strategies for engaging with them (Sandberg, 2011). Ultimately, we should support students to gain the necessary skills to navigate a digitally driven academic landscape while promoting a mindful and reflective approach to their reading practices.

Conclusion

Embracing mindful reading in digital spaces helps relieve sensory stress and offers such diverse benefits as deeper comprehension, improved information retention and a greater appreciation for content. Encouraging the widespread adoption of mindful reading techniques, in combination with technology's capabilities, nurtures a more serene reader-content relationship. This review calls for further research to underscore the importance of integrating mindful reading practices, aiming to establish a harmonious coexistence between technology and human well-being within the realm of reading.

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