Describing Communication Technologies

Specialized Dyslexic Typeface: OpenDyslexic

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New technologies and their byproducts are being developed at an increasingly rapid pace, often driven by the desire to solve specific problems or meet particular needs. One such innovation is the creation of computer fonts designed to improve readability for individuals with dyslexia. However, it is important to remember that just because a tool is new or digital does not necessarily make it effective.

To fully appreciate the development of specialized typefaces[1], it helps to understand the evolution of typography. Typography has a long history that dates back to the Middle Ages and even earlier in some civilizations. However, Johannes Gutenberg is often credited with revolutionizing typography in Europe during the 15th century. As the inventor of the movable-type printing press, he laid the groundwork for the development of fonts. Fast forward to the modern era, and with advancements in technology, digital typefaces emerged, starting with bitmap fonts made of tiny grids of pixels and evolving into vector fonts, which use mathematical equations to define the shapes of letters, allowing for scalability (Johnston-Baril, 2025). Given the evolution of typography, it is understandable that researchers have explored typefaces specifically designed to improve readability for those with dyslexia.

It is estimated that dyslexia affects 10 to 20% of the population and that males and females are affected equally (Shaywitz et al., 2021; Rello & Baeza-Yates, 2013). The term dyslexia has Greek origins; ‘dys’ means something difficult, and ‘lexia’ means having to do with words or language. The International Dyslexia Association defines dyslexia as

> a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities

[1] While the terms *font* and *typeface* are often used interchangeably, they are not truly the same. A *typeface* is a collection of related fonts, while a *font* refers to a specific iteration within that typeface. For example, Arial is a typeface, whereas Arial Bold 12-point is a font. However, for the purposes of this paper and the with the citing of other authors, *font* and *typeface* will be used interchangeably.

> and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge. (2002)

Simply put, dyslexia can be described as “unexpected poor reading in individuals who have the intelligence to be much better readers” (Shaywitz et al., 2021, p. 80).

“Due to the potential for poor school and post-school outcomes, teachers, parents, and advocates often feel desperate to locate and employ accommodations and interventions to help students with dyslexia read” (Wery & Diliberto, 2017, p. 115). With this in mind, it is no surprise that people turned to technology for solutions and developed specialized fonts to improve readability for individuals with dyslexia. The widespread use of computer technology in education facilitates educators' ability to adapt reading materials for students and adjust the font.

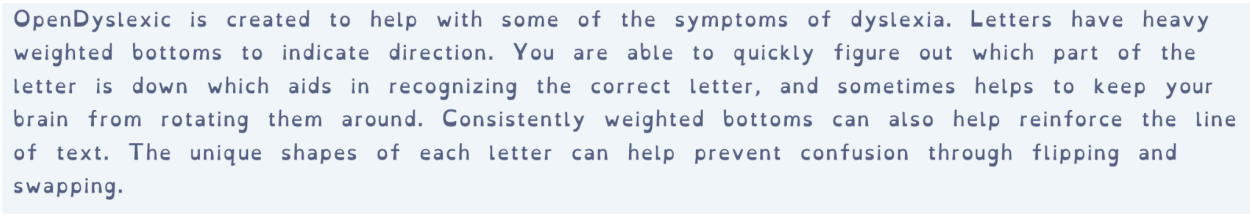
Specialized fonts for those with dyslexia are being advertised in some online applications as a selling point. Sora, an online ebook app developed by OverDrive for students, boasts about the availability of a dyslexia font, OpenDyslexic. In a blog post on the OverDrive webpage, an image claims that the dyslexia font on Sora will make your reading easier (Kalnay, 2019). Additionally, Bachmann and Mengheri (2018) state that “several publishers are specializing in suitable fonts for dyslexics and are publishing books specially designed for different age ranges of this audience” (p.2).

However, the increase in the creation of specific fonts to help those with dyslexia might be based on a misconception that dyslexia is mostly about letter reversals and floating or blurry letters (Wery & Diliberto, 2017). This paper will examine the OpenDyslexic font and review research on its effectiveness. OpenDyslexic was developed by Abbie Gonzalez by adapting the Vera Sans font. The motivation behind creating this font was to have a dyslexic-friendly font that was not restricted by licensing or affordability. (Schulz, 2016).

Many fonts claim to have been developed specifically to aid those with dyslexia. For example, the Dyslexie Font website claims it “revolutionizes readability for individuals with dyslexia by focusing on legibility and addressing their unique challenges” (2024). OpenDyslexic, on the other hand, makes a much subtler statement, claiming to be “a typeface designed against some common symptoms of dyslexia” (OpenDyslexic, n.d.). OpenDyslexic uses a SIL-OFL license, making it freely available for personal, business, education, commercial, book, ebook reader, application, and website purposes. Figure 1 explains how OpenDyslexic uses weighted bottoms to help readers identify the letters' direction while showing an example of the typeface.

Figure 1

Screenshot from OpenDyslexic’s Website Explaining the Features



Note. From OpenDyslexic, n.d. (https://opendyslexic.org/)

Returning to the International Dyslexia Association's definition of dyslexia, there is no mention of vision in its definition, but instead, it focuses on language's phonological components. In fact, the readability group points out that “Dyslexia is not a visual but rather a developmental neurological condition that affects the processing of word sound and comprehension” (Williams, 2020). Terada (2021) also reminds readers that “dyslexia is a language-based processing difference, not a vision problem, despite the popular and enduring misconceptions” (para. 6). Building on Washburn et al., 2013 research Wery & Diliberto (2017) suggest that “perhaps the typeface developers developed this font [OpenDyslexic] based on the same misconception that dyslexia is characterized by letter reversals, what is commonly held by

teachers" (pg. 115). So, is there any basis for claims that font will help those with dyslexia read more easily?

Wery & Diliberto (2017) conducted research with 12 students between the ages of 9 and 12 who had been identified as having dyslexia, although one student was excused from the study due to articulation concerns. The goal was to compare OpenDyslexic to Arial and Times New Roman on three reading tasks: letter naming, word reading, and nonsense word reading to test for differences in speed and accuracy.

Schultz (2016) explains the challenges in maintaining internal validity when comparing fonts. Simply changing the font, even while preserving point size, can change the font's height and spacing between letters and words, which changes how many letters can be on one line. Wery and Diliberto's research accounted for this by adjusting the font size to keep the physical size of the font the same. Students read lists of letters or words in three columns of double-spaced rows, so there was no difference in how many words/letters were on each line.

For each session, the students read the letter naming list, the real word list, and a nonsense word list consisting of one of the three fonts for one minute while their responses were recorded. If they paused for four seconds, they were told to skip that one and go on. It was observed that over the sessions, regardless of the font or the measure (speed or accuracy), students scored increasingly higher, which is expected with repeated practice. "However, no individual trend line for any of the specific fonts demonstrated a stronger increasing trend than any other" (Wery & Diliberto, 2017, p.120). It was also noted once the data was plotted that the lines had a significant amount of overlap, leading the researchers to state that "no one font led to significantly better or worse reading accuracy or speed" (Wery & Diliberto, 2017, pp. 120-121).

Of course, this is an extremely small sample size, and even the authors acknowledge that further research is needed to verify the results. However, a key takeaway that Wery and Diliberto (2017) point out is that "since students with dyslexia are already behind their

nondisabled peers in regards to reading achievement, it become [*sic*] more critical that educators use interventions empirically proven to be effective. Educators cannot waste time with interventions having no empirical support" (p. 125).

In another study that focused on adult US voters, Harley et al. (2016) were surprised that "the standard font, Helvetica, was preferred by participants with dyslexia over two fonts [Lexia Readable and OpenDyslexic] that were developed with the express purpose of being easy to read for people with dyslexia" (pp 108-109). They also warn that while the OpenDyslexic font was expected to perform better because the thicker line strokes were expected to reduce letter confusion for people with dyslexia, "several participants remarked that this effect was too extreme and made reading more difficult" (Harley et al., 2016, p.109).

The OpenDyslexic website lists studies discussing the font, yet these lack direct hyperlinks, making them challenging to access, and many are theses rather than peer-reviewed articles. For claims of effectiveness to be credible, they should be supported by rigorous scientific evidence published in peer-reviewed journals. However, surprisingly, considering the articles are cited on the OpenDyslexic website, many of them report no benefits, mixed results or a preference for standard sans serif over a dyslexic font (Jackson, 2014; Hoffmeister, 2016; Ramsey, 2014).

The International Dyslexia Association emphasizes that individuals with dyslexia need systematic and explicit instruction to develop a strong understanding of language, including phonics. One well-known approach is the Orton-Gillingham method, which can be expensive and time-consuming. When parents and educators are offered what seems like a quick fix for dyslexia, it can have serious consequences, such as delaying the start of proper intervention. Additionally, if students do not achieve the expected progress with alternative strategies, such as different fonts, it may negatively impact their confidence in reading.

While "we have no solid scientific evidence if dyslexia fonts help or hurt" (Schultz, 2016, p. 337), research is ongoing. For now, the International Dyslexia Association gives this practical

advice regarding font choice: “Whether you have dyslexia or not, experimenting with fonts may be worthwhile and boils down to personal preference. Above all, it’s important to remember for those who have dyslexia there are no quick fixes and switching fonts is not a substitute for a Structured Literacy approach to reading instruction” (2025).

The development of specialized fonts like OpenDyslexic reflects a broader trend in educational technology towards leveraging digital tools to address complex learning challenges. However, the lack of empirical evidence supporting these fonts highlights a key concern: technological innovation in education must be grounded in research to ensure effectiveness. As educators continue integrating technology into classrooms, they must remain critical by prioritizing evidence-based strategies and avoiding quick fixes that potentially undermine student progress or divert attention from proven interventions.

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