



Improve STEM Education by Implementing Individualized Format Readability

Dr. Stephanie Day, University of Central Florida
Dr. Ben D. Sawyer, University of Central Florida
Dr. Rochelle Rodrigo, University of Arizona
Amy Giroux, University of Central Florida

Workshop Agenda

12:40-12:45: Introduction & Research (Dr. Sawyer & Dr. Day)

12:45-12:50: Universal Design for Learning in STEM education (Amy Giroux)

12:50-1:00: Guided Activity with Sandbox

1:00-1:05: How to Personalize Font Styles (Dr. Day)

1:05-1:15: Mini-Lesson on Font Literacy (Dr. Rodrigo)

1:15-1:25: Guided Discussion on Teaching Font Literacy to Students (Dr. Rodrigo)

1:25-1:30: Q&A, Wrap Up



What is Format Readability?

Make small changes to text format
to improve a reader's ability
to read quickly and accurately,
and enjoy reading more.

Size

Weight

Width



Research

Readability

Long, long ago there lived in Kyoto a brave soldier named Kintoki. Now he fell in love with a beautiful lady and married her. Not long after this, through the malice of some of his friends, he fell into disgrace at Court and was dismissed. This misfortune so preyed upon his mind that he did not long survive his dismissal—he died, leaving behind him his beautiful young wife to face the world alone.

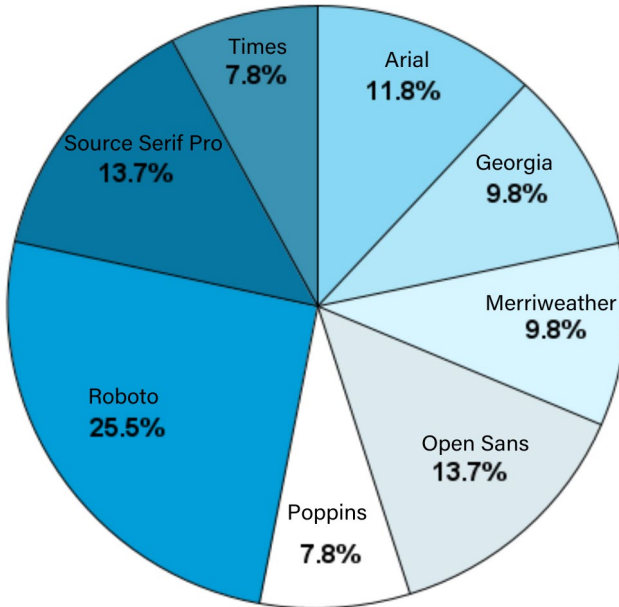
Readability

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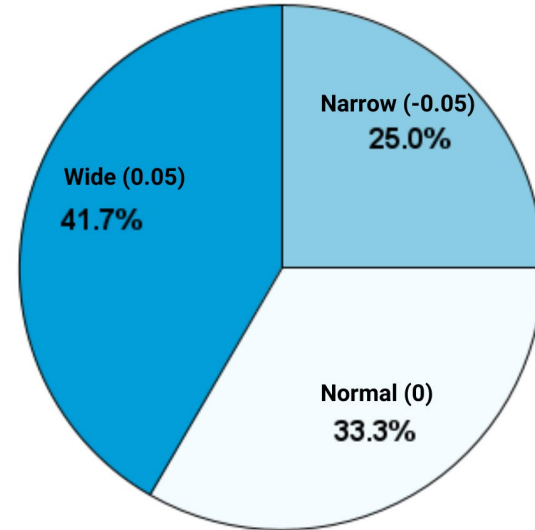


Introduction & Research

Best Font



Best Spacing



Universal Design for Learning in STEM Education

- Students are not equitable when it comes to design.
 - Implications for students across all subject areas.
- Limitations in features that let students reformat text in ed tech.
- UDL Guidelines describe displaying information in a flexible format:
 - The size of text, images, graphs, tables, or other visual content
 - The contrast between background and text or image
 - The color used for information or emphasis
 - The layout of visual or other elements
 - The font used for print materials



Guided Activity: Format at Readability Sandbox Tool

Play in the Sandbox to explore the impact of having access to the features that allow you to change your base font, your character spacing or character width, and more!

[Format Readability Sandbox Tool](https://readabilitymatters.org/readabilitysandbox)
readabilitymatters.org/readabilitysandbox

Discuss:

- Compare features with a partner
- Which features do you think are most beneficial for you?
- Think about the ways in which you currently present materials and assess students.
- What implications could these differences have for students?



Tune Your Text

Changes to Text Size, Shape and Spacing
Create Better Reading

5

**READING
TECH TIPS**

FOR

**BACK TO
SCHOOL**

Play in the **Readability Sandbox** to learn what features might be important to you



PDF | Use Adobe Reader's Liquid Mode to adjust size, character and line spacing

Web | Many sites offer changes to font, size, and other readability features



Kindle | Adjust readability features- size, font, and line spacing

Immersive Reader | Investigate font, size, and character spacing options



Form at
Personal-
ization
Tips for
Students

<https://readabilitymatters.org/articles/5-reading-tech-tips-for-back-to-school>



Reader Preferences

Display

Highlighters

Sharing

Text Size

Aa

Aa

Aa

Aa

Font

Atkinson Hyperlegible

Mode

Day

Night

Sepia

Cyan

Margin

Line Height

Does something not look right?

[Reset to publisher format](#)



Reader Preferences

Default Font

Sans Serif

Old Style

Modern

Humanist

Monospace

OpenDyslexic

✓ Atkinson Hyperlegible

Mode

Day

Night

Sepia

Cyan

Margin

Line Height

Does something not look right?

[Reset to publisher format](#)

ONE MINUTE DESIGN:

WHAT IS FONT FAMILY?

ARIAL LIGHT

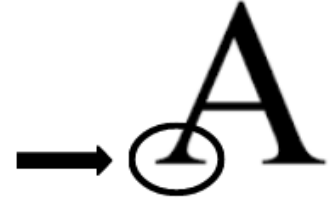
ARIAL REGULAR

ARIAL BOLD

WEIGHT

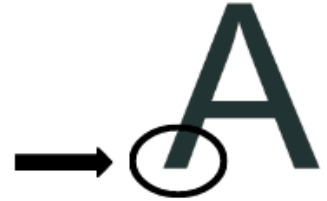
Serif

Serif fonts are recognizable by the “feet” at the tops and bottoms of the letters. They are considered more traditional fonts. Examples of serif fonts include Times New Roman, Georgia, and Garamond.



Sans-Serif

Sans-serif fonts do NOT have feet at the tops or bottoms of their letters, and are considered more modern and simplistic. If your fastest reading font is sans-serif, such as **Ariel**, some alternative font options are **Helvetica** and **Calibri**.



Monospace

Monospace fonts have characters that are all the same width, giving text the appearance of a manual monospaced typewriter. Examples of monospaced fonts include Courier New and Consolas.



Form at Readability Resources

[Identify your favorite font](#) and explore similar font families!

I *De* **n** *t* **i** *f* **o** *n* **T**®



Individualized Readability Form at In the Classroom

1. Why is this important?
 - a. What would motivate teachers to incorporate?
 - b. What would motivate students to use?
 - c. What stakeholders can you rally to help?
2. When/where in the curriculum do you think you could incorporate it?
 - a. What obstacles do you imagine exist?
 - b. What resources do you have to help?



Get involved or connect TRC to a:

- **Social Media Follower**
 - Connect on Twitter, Facebook, or Instagram
- **Readability Community Member**
 - We host a monthly roundtable of readability researchers and stakeholders
- **Partner Teacher**
 - We partner with schools and teachers to test our technologies
- **Research Associate**
 - We work directly with researchers and entities on aligning projects
- **Member**
 - TRC is a roundtable of industry and nonprofit members, guiding our research
- **Other Interesting Partner**
 - Who should we be talking to? Tell us at team@thereadabilityconsortium.org

Research Associates

Research Associates work directly with The Readability Consortium’s Research Team and Members on projects aligning with our interests, providing and receiving in-kind resources.



Research Associates provide subject matter expertise, population access, and explore their own vital areas of readability research.



University of Arizona

Shelley Rodrigo, PhD
[Rochelle \(Shelley\) Rodrigo](#) is the Senior Director of the Writing Program; Associate Professor in the Rhetoric, Composition, and the Teaching of English (RCTE); and Associate Writing Specialist (Continuing Status) in the Department



University of Toronto Mississauga

Ben Wolfe, PhD
Dr. Benjamin Wolfe is an Assistant Professor in Psychology at the University of Toronto Mississauga, where he is a Director of the [Applied Perception and Psychophysics Laboratory \(APPLY\)](#). Prior to joining the faculty at the University of



University of Toronto Mississauga

Anna Kosovicheva, PhD
Anna Kosovicheva is an assistant professor in the Department of Psychology at the University of Toronto Mississauga. She does research on visual perception, with a focus on spatial vision, eye movements,

Q&A and Wrap Up

- To better understand how format readability can optimize learning for students, we are currently seeking research partnerships with teachers and students in K-12.
 - For more details on how to get involved, please see Dr. Stephanie Day or email at stephanie.day@ucf.edu
- Any questions?

