

## Individual Differences in Working Memory Capacity and Reading Comprehension of Electronic Texts

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Walker, Jenny A. and Redick, Thomas R., "Individual Differences in Working Memory Capacity and Reading Comprehension of Electronic Texts" (2016). *Human Factors and Applied Psychology Student Conference*. 2.

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## Individual Differences in Working Memory Capacity and Reading Comprehension of Electronic Texts

Technology is unquestionably changing the nature of education. Computers, tablets, e-readers, and cell phones are rapidly replacing print text and handwritten notes. These devices are not only the dominating sources of communication in current society; they also represent a connecting point between information and the minds of modern students. The term working memory refers to the immediate, transitory processing and storage that takes place as an individual completes higher-order cognitive tasks. Working memory has a clear relationship with learning, reasoning, and comprehension in the classroom (Baddeley, 1992). However, each individual has a working memory capacity (WMC) which limits how much information he or she can store and manipulate in a given period of time (Turner & Engle, 1989). Individuals with lower WMC, meaning the amount of simultaneous information they are able to process is limited, often have difficulties with reading comprehension (Daneman & Carpenter, 1980), are likely to experience distraction from extraneous information (Sanchez & Wiley, 2002), and are more prone to wind-wandering (McVay & Kane, 2009). At the same time, individuals with high WMC are less likely to experience these difficulties to such a debilitating degree. The majority of current research focuses on reading comprehension using print material. This study examines individual differences among WMC, reading duration, and comprehension using electronic texts in an effort to explore the role technology has on learning. An additional goal of this research is to determine if there is a relationship between WMC and eye fixation patterns while reading text, interacting with graphs, and viewing images. Participants first completed Operation Span to measure WMC, read selections from an electronic textbook while their eye fixations were monitored by a Tobii TX300 eye tracking system, answered questions about the material, and completed a demographics questionnaire. Data collection is ongoing.