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Digital Reading in the FYC classroom WPA-CompPile Research Bibliographies, No. 29

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Introduction

This annotated bibliography provides WPAs with a bird's eye view of the scholarship on digital reading relevant for the first-year writing classroom. College students consume a wide range of digital media which impacts their composition practices, something that was one of the reasons that prompted the need for a revision of the WPA Outcomes Statement (Dryer et al., 2014). In our experiences both as college students and teachers over the last decade, we have seen an increase in the use of digital media like PDF reading softwares and learning management systems to access instructional materials like readings, syllabi, lecture notes etc. We have also noticed a further acceleration in this phenomenon due to the remote-learning conditions enforced by the COVID-19 pandemic over the last year (2020-2021). Because of our experiences with these evolving teaching and learning conditions, we think that educators who teach or administer reading and writing at the college level would benefit from understanding how digital reading affects students and faculty. We hope that this bibliography enables WPAs to make evidence-based, strategic decisions for designing curricula and professional development opportunities for writing faculty that are focused on developing digital reading skills.

But what exactly does digital reading mean? What happens when we add the adjective “digital” to reading? Texts or information can be created and transmitted in many different forms, with digital being one of them. According to the CompPile glossary, the word digital refers to “text technology that uses electronic, discrete input (e.g., computer display), as opposed to continuous analog input (e.g., typed material or printed book)”. Over the last half century, various digital forms of storing and transmitting texts have become popular across domains. Considered in the broad sense, digital reading could be the reading of any digital text, even digital signs on a freeway, but for the purposes of this bibliography we narrow the meaning of digital reading to the reading of digital texts by students for curricular purposes, specifically within first year composition (FYC) contexts.

While students have been doing digital reading in many forms for over the last three decades (e.g. emails, news-bulletins, listservs etc.), only in the last decade or so have digital readings in the form of textbooks and other assigned curricular material become ubiquitous across college classrooms (O’Sullivan, 2018), including first year composition classrooms. Such curricular digital texts can be read on a variety of screens like computers, tablets, or mobile phones etc. and exist primarily in two forms:

- I. as traditional physical books that are converted to digital format like pdfs (for example, a softcopy of a textbook)

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<http://comppile.org/wpa/bibliographies/Bib29/Ginosian-Gupta.pdf>. Date of access.

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- II. as born-digital texts, or texts that were originally created in the digital medium itself rather than being converted into it. These have additional features like multimodality and live interaction which aren't present in physical books (for example, think of the content that students access on their courses' learning management systems).

While there is a long history of research on the pedagogy of print-based reading practices in FYC (see Carillo, 2015 for a comprehensive annotated bibliography on this), research on the pedagogy of digital reading in FYC is nascent but gradually increasing. The exigence for this emerging research includes the advocacy done by scholars in writing studies over the last decade to include learning outcomes that foster students' awareness "of the different strategies needed for reading in Web environments" (Mutnick, 2012, p 194) in updated versions of the CWPA Outcomes Statement (CWPA, 2014). Our bibliography consolidates research that has emerged concomitantly with this exigence over the last decade.

Given the current uncertainty around the term "digital reading," a brief discussion of our search strategy may be useful. We initially started with the term "digital literacy" but that led to many results that spoke more about digital composition rather than digital reading. Accordingly, we gradually shifted to using search strings that used different combinations of the phrase "digital reading" with "higher education", "administration", "composition", and "college". Since digital reading is a research area both within writing studies as well as allied fields like education and psychology, we used these strings in a range of databases *CompPile*, *ERIC* and *Google Scholar* as well as clearinghouses like the University of Arizona's e-library. We found few studies that directly addressed the intersection of digital reading and writing program administration. There were however various studies that addressed the experiences of doing digital reading from the perspectives of students or the experiences of implementing digital reading from the perspectives of faculty and librarians. We felt these perspectives could be useful for WPAs given that "curricular design" and "faculty development" are key areas of their intellectual work (CWPA, 2019). We thus added "students", "faculty OR teachers", and "librarians" to the list of key terms that we used to create permutations in our search strings.

Using this rationale, as well as assuming that many of our readers might not be familiar with the scholarship on digital reading, we divided our annotated bibliography into three sections: 1) What is Digital Reading? — which consists of studies that attempt to define this term; 2) Teacher perspectives — which consists of studies about teachers' strategies and experiences of implementing digital reading technologies in their classrooms; and 3) Student perspectives — which consists of studies about students' experiences with digital reading in a diverse range of contexts. Each section is described more fully below.

1) What is digital reading?

Annotated works in this section define digital reading along three themes: 1) the effects of digital reading on our minds and bodies; 2) the differentiation between digital and print reading; 3) the challenges as well as opportunities that have risen because of these and students' and teachers' attempts to navigate them.

Horning (2012) and Crowley-Sullivan (2020) analyze the cognitive load that reading digitally requires and compare cognitive processes involved in print reading and digital reading. These two authors differentiate digital reading from print reading because it requires a different set of skills. In defining these skills they both develop analogous terms, for example, "shallow reading" (Horning, 2012), which is a process by which readers skim through text and attempt to identify important information and "efficient cognitive resource management" (Crowley-Sullivan, 2020), which are the nuanced ways readers are

reading digitally. Surprisingly, both of these terms involve the reader making their reading load lighter or simpler. Drake (2013) directly illustrates some of these ideas of cognitive management through his research on undergraduate information literacy practices. Similarly, Tham & Grace (2020) as well as Nichols (2016) and Cohn (2021) suggest that digital reading, with its many affordances and potential for media distractions, might pose the challenge of excessive cognitive overload at first. However, they claim that in the long run digital mediums can actually help reduce students' cognitive load as they learn how to customize reading formats, such as fonts and line spacing, to better suit their needs. The general takeaway from this subsection of authors who approach digital reading from a cognitive perspective is that there are new affordances to reading texts digitally. Thus, it will require new skills to harness them effectively. Additionally they note that these experiences might be challenging and overwhelming at first to someone who has little experience with digital interfaces; however, digital mediums have the potential to ease cognitive loads with extended engagement and management.

To help students manage these challenges, Pigg (2010) is an example of what most of the readings we found suggest, which is: helping students develop more mindfulness about their reading behaviours and the environments that shape them, taking more agency in choosing what mediums work best for their multiple needs, and enabling them to build bridges between their outside the classroom digital literacies and inside the classroom academic literacies (Pigg, 2010). Some examples of how all of these are being done in different higher educational contexts are highlighted in each of the authors' works in this section. However, sources that do more in-depth exploration of these challenges as well as solutions from the perspectives of teachers and students have been catalogued in our next two sections.

2) Teacher perspectives

In this section of the bibliography we included sources that show how to effectively incorporate digital reading pedagogy into college writing classrooms. These sources contain empirical research and pedagogical examples of teaching experiences that illuminate challenges and opportunities for educators seeking to incorporate digital reading in their writing classrooms. Not to our surprise, there were mixed responses based on the experiences of teachers attempting to implement digital reading practices into their classrooms.

Rodrigue (2017) describes their experiences of using an action-oriented approach to digital reading pedagogy in FYC classrooms. This involved helping build multimodal genre awareness in students by making them read multimodal texts as well as by reading the same texts across different media and then reflecting on their experiences. While Rodrigue's experience implementing these multimodal texts into their FYC class seems fluid and easy, other authors foreground how instructors need greater support when teaching students how to access digital texts and analyze them rhetorically.

Mina (2019) and Larson (2012), who collected data from preservice and current teachers at different grade levels, including FYC contexts, report a contrasting experience.. Their findings show that there are a substantial number of educators who find that teaching through a digital medium is not really productive for learning and they end up adopting these technologies instrumentally rather than having any critical awareness about them. Their findings raise questions regarding the efficacy of incorporating digital texts in classrooms and also urge WPAs to invest in professional development opportunities so that instructors can learn not only how to use digital reading technologies but also to critically reflect on the larger historical and social contexts of their use in literacy education.

To alleviate some of these challenges posed to WPAs, several readings strongly recommend relationship-building between teachers and librarians. Graham et al. (2017) for example show that interdisciplinary collaboration between instructors and librarians helped in developing fine-tuned digital technologies for students that fit the needs of their specific classrooms. Similarly, Acheson et al. (2013) conducted a study that triangulated instructor, student, and librarian experiences with incorporating Kindle readers in classrooms. While the librarians found the increased accessibility to texts and the overall intertextual experience that Kindle offered to be largely positive, both the teacher and the students displayed more mixed responses that appreciated these benefits but also highlighted their navigational challenges and their general preference for printed material.

These mixed responses affirm Horning (2012) and Crowley-Sullivan (2020)'s observation in the previous section that digital texts require new forms of literacies which take time to develop.

3) Student perspectives

The final section of the bibliography features sources that focus on two major points: 1) How can students transfer existing knowledge to develop digital literacies?; 2) How do international students and multilingual people experience reading digitally?

Within the undergraduate experience, we found that many researchers are attempting to understand how students are reading and retaining digital texts in order to identify students' biggest challenges and ultimately help them improve as digital readers. Sandberg's (2013) and Rodrigue's (2017) studies show that the two main areas that students struggle with regards to digital reading is with navigating hypertext and with developing digital genre awareness. Rodrigue (2017) addresses these problems by teaching genre awareness through multimodal platforms which they claim improves students' overall digital literacy as well.

The other interesting intersection we found in this theme was between second language (L2) acquisition studies and digital reading. Park (2020) is an ideal example for how L2 students and digital reading suggests that L2 students benefit from using digital texts because they are able to access secondary reading material like summaries, dictionaries and multimodal conceptual explanations, build a deeper understanding of their primary texts while also communicating with each other to collaboratively understand difficult texts (Park, 2020). Xiqiau (2019) concurs with this understanding and claims that meaning making using digital texts is "multilayered" for L2 students (578).

While Park (2020) and Xiqiau (2019) focus on students' experiences engaging with single texts, Hirvela (2005) assesses L2 students' experiences reading digitally across their entire coursework. Interestingly, they finds that the use of consistent digital technologies in classes across disciplines helps L2 students negotiate meaning. Therefore, they proposes what is similar to a WAC model that involves the same digital technologies to be used across classroom assignments throughout a students' college experience, with each discipline taking a small responsibility in teaching these literacy skills. Having this consistency across curricula at a university would be ideal for all students considering that digital reading is a new literacy for students to acquire that is different from traditional reading practices (Arroyo, 2005).

We are grateful to all the kindness, vision, and warmth that Dr. Shelley Rodrigo, our mentor in the ongoing digital readability project at the University of Arizona, of which this annotated bibliography is a small offshoot, provided us with. We are also grateful to our fellow Research Assistants Jack Clark, Anna Leach and Anh Dang, who helped us find some of the sources in our annotated bibliography which are

from fields outside writing studies. We are also extremely thankful to Dr. Dylan B Dryer for his patient and thoughtful reading and feedback on our several drafts.

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SECTION 1: “WHAT IS DIGITAL READING”

Arroyo, Sarah J.

"Playing to the Tune of Electracy: From Post-Process to a Pedagogy Otherwise." *JAC : A Journal of Composition Theory* 25.4 (2005): 683-715. Web.

By synthesizing Gregory Ulmer's theory of 'electracy', along with other postmodern scholars like Barthes, Deleuze and Agamben, this article provides an innovative perspective to understand practices of literacy in a digital age. Ulmer understands orality, literacy, and electracy as three different historical paradigms which have produced different practices as well as modes of theorizing. Arroyo sees electracy as beginning with photography and currently exists in the avatar of digital technology. While most universities today are built around print-based notions of literacy and analytical styles of linear thinking, Arroyo claims, "the logic of electracy is imagistic and associative" (698). Instead of using traditional logic, electracy requires readers to "construct patterns from dissociated parts" (698). in which "connections are more important than proofs: creating a network is more important than explaining things in depth and with critical distance" (702). WPAs will find Arroyo's essay useful if they are interested in contextualizing student and faculty data about digital reading/writing practices within contemporary developments in cultural studies and postmodern theory.

Keywords: Electracy.

Cazden, Courtney; Cope, Bill; Fairclough, Norman; and Gee, Jim.

"A Pedagogy of Multiliteracies: Designing Social Futures." *Harvard Educational Review* 66.1 (1996): 60-92. Web.

This foundational reading in multimodal literacy (of which digital reading is a subset) will help WPAs gain a thoughtful engagement with this area. The authors expand traditional notions of monolingual, text and print based literacies along two dimensions — multimodality and multilingualism.. The fundamental framework that they introduce is that of "designing meaning for social futures" (65) whereby they posit that all meaning making activities (what in the WPA world we might think of as all composition activities) involve a re-designing or transformation of available semiotic resources or modes of meaning to create new social futures. They classify these modes of meaning into linguistic, visual, gestural, spatial and audio and also provide a taxonomy of internal design elements that each of these semiotic modes contain. Finally they chart out a framework for pedagogies that can help incorporate a multiliteracies approach. This framework consists of 4 pedagogic principles: situated meaning, explicit instruction, critical practice, and transformed practice (88). This essay can help meaningfully scaffold and contextualise WPAs' thinking about digital reading within larger developments in higher education and literacy studies, something that could help them develop meaningful conversations with scholars and practitioners in education departments and libraries at their institutions regarding potential collaborations around students' digital reading practices.

Keywords: Multiliteracies, multimodal, design

Cohn, Jenae.

Skim, Dive, Surface. Morgantown: West Virginia UP, 2021. Web.

Cohn proposes that new media technology creates a tension for instructors in higher education. They describe this tension as, "the tension between adapting to the conditions of our constantly changing technologies and teaching the habits of mind that remain critical to knowledge consumption and analysis" (29). Cohn's aim is not to abandon old reading techniques and simply adopt new media into teaching methods. Rather, they suggest that instructors can work with their students to best address their learning styles while continuing to teach valuable skills students must develop when reading digitally. Cohn develops a framework with, "the guiding principle that the material constraints and affordances of our reading and writing technology must be central to how we conceptualize learning" (129). Thus the pedagogical techniques they suggest focus on: curation, connection, creativity, contextualization, and contemplation. In the chapter focused on contextualization, for example, Cohn gives step by step activities for students to take part in that requires them to find a foundational texts in a subject of interest, trace that text through other places it has been cited, and developing a trail of texts that are in conversation with one another. These activities in Cohn's book can be used by WPAs to effectively train faculty to teach FYW students through relevant media tools while also teaching to their strengths in traditional reading practices.

Keywords: digital, reading, screen, cognitive-style, learning-style, information-mapping.

Coiro, Julie.

“Toward a Multifaceted Heuristic of Digital Reading to Inform Assessment, Research, Practice, and Policy.” *Reading Research Quarterly* 56.1 (2021): 9-31. Web.

This article reviews a wide range of existing definitions of "digital reading" and finds inconsistency in its operationalization across disciplines. To tackle this issue, the article offers a heuristic in the form of a visual diagram (p. 11) which seeks to clarify the various sub-constructs involved in processes of digital reading as well as their relationships, including Reader, Text, Context, and Contextual Design — with internal sub-constructs or sub-types for each of these. WPAs will find the lucidity of this heuristic particularly useful in grounding their understanding of digital reading and all its sub-constructs. It will help to show them what possibilities exist with each of the 4 constructs that make up digital reading, which may contribute to more mindful design of reading assignments. For example, the construct of Text in this heuristic has 9 sub-types: hybrid text, multimedia, multimodal text, on screen text, hypertext, internet text, augmented text, literary text, and informational text. While designing reading-based activities in their courses, WPAs can encourage teachers to not just include diverse content in their readings, but also diversify the types of digital texts they assign to increase students' understanding of the many shapes of digital texts in the world around them.

Keywords: Digital, reading, heuristic, multimodal, reader, reader-background, reader-awareness, reading-process.

Crowley-Sullivan, Meaghan.

“Increase Readability, Reduce Cognitive Load.” *Readability Matters*. 16 July 2020, <https://readabilitymatters.org/articles/increase-readability-reduce-cognitive-load>.

This short article will provide WPAs who are pressed for time with a condensed understanding of the cognitive processes that happen in reading through a perspective of cognitive load. Using a visual metaphor first developed by Scarborough (2001), Crowley-Sullivan presents the reading process as a braiding together of multiple smaller processes: word recognition (phonological awareness, decoding of sound-spelling corresponded and sight recognition of similar words) and language comprehension (background knowledge, vocabulary, syntax awareness, verbal reasoning or ability to draw inferences across sentences, and literacy or rhetorical knowledge of genres etc.). Each of these processes places a cognitive load on our working memory which has finite resources. In order to improve students' abilities to read, Crowley-Sullivan suggests that we must strive to reduce the load that these different processes create in their minds. To do this, the article recommends readers to experiment with font type, font size, character and line spacing in their digital reading platforms so that less cognitive load is placed at the word recognition stage and more space can be created for the language comprehension stage. This framework can enable WPAs to think more concretely about good reading as a form of efficient cognitive resource management, and digital reading as having the potential to both increase cognitive loads as well as reduce it. Using Crowley-Sullivan's suggestion, WPAs can nudge their digital textbook providers to include options that allow students to change the font type, size, character and line spacing on their reading platforms.

Keywords: Digital, readability, cognitive load, psycholinguistic, font/typeface, document-design

Drake, Erik D.

“Undergraduate Research and Information Literacy in the Digital Environment.” *Reconnecting Reading and Writing*, edited by Alice S Horning and Elizabeth Kraemer, *Parlor Press* ; *WAC Clearinghouse*, 2013, pp. 220–247.

In this chapter, Drake reviews the research on information seeking behaviours or the "process of seeking information for the purpose of synthesizing information and producing a product" (221) in undergraduate students in digital environments. Drake defines information literacy as the "fluency of researchers with respect to seeking information" (224). In terms of frameworks that help explain this phenomenon, Drake emphasizes the Eisenberg and Berkowitz (1990) Big6 Skills model which consists of sub-processes like "definition of the task and development of information seeking strategies; the location and use of information; synthesis of information into a written or other creative product to be shared with others; and evaluation of the product and process" (222). Then, Drake surveys research on information seeking in digital spaces and presents the following significant trends: a) growing anxieties about students' haphazard search strategies; b) an increase in the use of multimedia sources; c) readers' preference for smaller chunks of texts and more visual rhetoric; d) certain behaviours like keyword spotting and selective reading have increased while others like in-depth concentrated reading have decreased; e) existing efforts for information literacy instruction conducted by most libraries are often outdated and need to adapt to rapidly changing information seeking behaviours. WPAs can use this research on undergraduate digital reading to develop a deeper understanding of the affordances and challenges undergraduates might face conducting secondary research in FYC classrooms. Because students are often introduced to using databases to gather evidence for writing essays in FYC, WPAs will find this knowledge useful while brainstorming with writing instructors on how best to improve undergraduate information literacies in FYC classrooms.

Keywords: Information-load, undergraduate, digital, reading, screen, usability, literacy,

Hayles, Katherine.

“How we Read: Close, Hyper, Machine.” *ADE Bulletin*. 62-79. 2010.

In this literature review of studies on reading, Hayles suggests that literary studies needs to embrace how reading is being done by most readers in the 21st century in order to make an impact on students' literacy practices at the college level. To do this they attempt to link three prominent categories of reading: close reading, hyper reading, and machine reading. While close reading is a dated term WPAs can still make an effort to include multimodal reading in their curriculum. For example, Hayles offers a “Literature+” course, which blends new media tools with traditional literary practices to engage students with close reading exercises, as a relevant example of how reading studies is changing to adopt digital reading and composition into existing literature curriculum. Hayles also discusses the growing field of machine reading and hyper reading. Machine reading is the process of digitally collecting large groups of text and treating it like data to find trends and hyper reading is a form of reading that is taking shape in digital mediums that involves fast skimming of key words and chunks of text to find meaning. Using examples such as Lev Manovich's aggregation of "Time Magazine" covers, Hayles shows how reading in the 21st century continues to undergo dramatic changes. Because most FYW classrooms involve some sort

of genre analysis WPAs can encourage faculty to use computational tools and digital modalities in their classroom to broaden students' approaches to reading a text and analyzing a genre.

Keywords: Digital, reading, exercise, cybertext, screen.

Horning, A.

"Reading Traditional and Electronic Texts. In *Reading, Writing, and Digitizing: Understanding Literacy in the Electronic Age*." Cambridge Scholars Publishing. (pp. 164–181).

While most researchers in our bibliography begin their work from an assumption that print-based and digital reading processes differ, Horning uses a psycholinguistic perspective to argue that there is a lot of overlap between the psychological functions required to read the two. According to her, print-based reading requires "five general cognitive capacities, including identification or recognition, categorization, discrimination, prediction, and limited short-term memory, along with two major linguistic capacities, the use of syntax, and psycholinguistic redundancy" (165). To tackle the unique features of digital texts, readers need to add two additional mental capacities, what Horning calls "bricolage and juxtaposition" (165). The rest of the chapter illustrates a major problem caused by spending too much time in digital environments, which is difficulty in concentrating which is leading to something called "shallow reading" or the kind of reading where readers skim through texts quickly in an F shaped eye movement pattern. While this skill of skimming works well to locate sources in digital environments, novice readers who wish to become experts also need to learn how to transition from skimming to immersive, deep reading. The chapter discusses some approaches to tackle this issue, like developing metacognition about discerning when to use shallow and deep reading. The chapter also describes a useful way to measure digital reading proficiency. WPAs will find this text useful to create a heuristic of the various sub-processes involved in digital reading and to learn more about how scholars are tackling emerging problems in digital reading, both of which can come in handy as they work with faculty to revise their curricula to incorporate digital reading.

Keywords: Digital, reading, cognitive-load, aptitude testing, psycholinguistic.

Hurley, Tracy; Fekrazad, Amir.

"E-Textbooks, Inclusive Access, and Academic Performance." Inclusive Access and Open Educational Resources E-text Programs in Higher Education. *Cham: Springer International*, (2020). 177-84. Web.

In this article, the authors present inclusive access e-textbook programs as a new platform that can potentially help administrators provide students with competitively priced options for accessing legally published books for their classes. Instead of buying individual books, through these programs, students can pay a fee to a service provider who gives them digital access to their textbooks through an online portal. The authors of this article study the impact of one such program on students' academic performance at their university to test its long-term usefulness. In their study, they collected quantitative data about grades, course modality, student demographic, as well as whether particular courses used the e-textbook program or not through the University's Student Information System. This data included a sample size of over 13,000 students in 3600 classes spread over 3 years. The results showed an interesting pattern whereby undergraduate students enrolled in e-textbook programs got higher grades than those who weren't by almost 6

percent ($p < 0.05$) while graduate students demonstrated the opposite effect by about 4 percent ($p < 0.05$). Using this, they conclude that “using e-textbooks has a positive impact on student success, especially for undergraduate/younger and Hispanic students”(181), while the lack of a similar impact on graduate students could possibly be because of their higher ages which potentially makes them less used to digital reading environments (181). WPAs would find this article useful to understand the inclusive access model of e-textbook programs and could also use its data to make persuasive arguments about developing similar programs at their institutions with higher administrators, if they wanted to. Of particular interest to WPAs would also be instances in the essay when the authors share information about the processes of price negotiation between administrators, e-textbook intermediaries and publishers that helped the university they were studying to keep the overall cost of e-textbooks to under 10% of tuition. Such information as well as their suggestions about developing multi-university agreements to improve negotiation power for better pricing would be beneficial for WPAs wanting to learn how to optimise pricing structures for their students.

Keywords: access, textbook

Nichols, Mark

"Reading and Studying on the Screen : An Overview of Literature towards Good Learning Design Practice; Addendum : Reading and Studying on the Screen." *Journal of Open, Flexible, and Distance Learning* 24.1 (2020): 33-60. Web.

Nichols presents readers with the pros and cons of digital reading and offers ways to think about digital reading through a learning design perspective, which is the perspective of people who design instructional products. Currently, the literature points towards several advantages of digital reading over print: seamless integration with "additional resources and references such as feedback activities, illustrative media, and glossaries" (2); much better portability; availability across various devices; text manipulation (font, colour, contrast etc.); annotations and sharing between multiple users; tracking of reader activity through real-time analytics; better universal design support through captioning services for disabled users; key-word searching across texts; and reduced production and distribution costs. Within this, Nichols pays special attention to learning analytics as a largely under-recognised benefit of digital reading that has immense potential to personalise learning material and generate early warning signs of dropping out. However, one of the main impediments to realising all these, according to Nichols, lies in increased cognitive load in digital reading caused due to a lack of haptic or tactile familiarity, extra navigational activity, increased distraction, and reduced comprehension. Nonetheless, it is possible to remedy these with increased familiarity over time, better scaffolding and advancements in user interface design. Finally the article ends with important recommendations on how best to integrate digital reading into different educational institutions like developing more awareness in students of their reading behaviours, greater signposting by teachers and designers in digital texts, gradually increasing the cognitive load that students have to deal with over time, and helping students select clean, user-friendly digital reading interfaces etc. This article can help WPAs reframe digital reading from a problem that needs solving to a new realm of meaning-making possibilities that requires exploration.

Keywords: digital, reading, paper-screen, eye-movement, filtering, fold, FTF-screen, blinking

Pigg, Stacey.

“Teaching New Mediated Student Bodies: Five Applications.” *RAW Reading and Writing New Media*, edited by Cheryl E Ball and James Kalmbach, 2010, p. 26.

Building upon literature that focuses on the embodied nature of literacy practices, Pigg shows students' digital reading and writing as embodied acts which involve the mediation of new digital media technologies. Using empirical data from the Embodied Literacies project where n=200 FYC students at the University of Tennessee were studied, Pigg charts some common undergraduate behaviours and conceptions about their use of digital technologies in the writing classroom. The major insights from Pigg's are: a) while students are conscious about the literate nature of academic events like the writing of a book report, most students are oblivious that digital reading and writing events like text messaging or internet browsing are also literacy events; b) digital reading requires students to pay attention to and prepare for several negative impacts that these technologies have on their bodies like aching backs, dry eyes, and increased anxieties; c) digital literacies, like all literacies, require disciplining of bodies; d) online environments enable students to perform their identities and construct their ethos in a more expansive way than physical environments through the use of affordances like emoticons, aliases, codeswitching, role playing and slang; e) it is vital to cultivate awareness about the material ways in which students' bodies interact with digital literacy technologies to make them good digital readers and writers; f) it is helpful to enable students to build bridges between their outside the classroom digital literacies and inside the classroom academic literacies. Throughout the essay, Pigg also gives useful assignment templates that FYC teachers can use to immerse their students in each of these insights. This essay will help familiarize WPAs with the bodily challenges that students face with digital reading, which may help them to avoid ableism and to design curricular material on digital reading in a manner that is cognizant of the diversity of students' bodies. The essay also offers several ready-to-use assignment templates through which WPAs can help teachers develop students' reflectiveness about their digital reading practices.

Keywords: digital, reading, design, body, embodiment.

Tham, Jason; Chew Kit; and Grace, Rob.

"Reading Born-Digital Scholarship: A Study of Webtext User Experience." *Computers and Composition* 58 (2020): 102601. Web.

This study of think-aloud protocols contributed by scholars reading born-digital scholarship will be helpful in familiarizing WPAs with emergent genres of digital scholarship as well as with the challenges that readers face while reading them. The genre of born-digital scholarship includes research publications that have been created in digital formats and can exist in that medium only; they are characterised by non-linearity, hypertextuality, interactivity, immersion, and multimodality and largely exist in the form of webtexts which can include "digital photographs, digital manuscripts, harvested web content" (2) among many others. The authors of this study found that "scholars in the think-aloud sessions read using webtext features in practices of skimming, scanning, and close reading" (8); ii) they "experienced a sense of placelessness, unfamiliarity, and freedom when reading born-digital webtexts" (8). Implications of these findings about digital reading involve encouraging scholars and editors producing research in born-digital formats to incorporate "site maps and descriptive abstracts that facilitate skimming, recognized

keywords, especially for menu items, and full-text search to facilitate scanning, as well as modular approaches to web text design that facilitate close readings of web text pages along nonlinear, user-defined paths" (1). These findings and implications can be used to enhance students' and teachers' audience awareness when designing or doing digital composition assignments.

Keywords: Design, cybertext, interface, product-design, readability, screen, usability.

SECTION 2: "TEACHER PERSPECTIVES"

Acheson, Phoebe, et al.

"Kindle in the Writing Classroom." *Computers and Composition*, vol. 30, no. 4, Dec. 2013, pp. 283–96. DOI.org (Crossref), doi:[10.1016/j.compcom.2013.10.005](https://doi.org/10.1016/j.compcom.2013.10.005).

This study describes a collaboration between an English faculty member and two librarians who adopted Kindle as the primary mode of reading for students in an undergraduate course on Environmental Literature. Through in-class observations, online surveys, and focus groups of 18 students, as well as the English faculty's notes about their own changing pedagogical repertoire, the authors triangulate student, instructor, and librarian perspectives on adopting digital reading. Their findings showed that the students experienced contradictory feelings. While on the one hand, they felt "a sense of nostalgia and romance about reading from the printed page" (293), simultaneously, they also enjoyed the "convenience of downloading digital texts" (293). This is why their overall preference was to have "access to materials in multiple formats, choosing e-readers for some cases where its portability is an important attribute and printed texts where the ability to make notes on paper is the aspect of the format that is most important." (p. 293). The faculty too had mixed responses and found that the Kindle proved successful with regards to immediacy and accessibility of content, but it was challenging in terms of navigation and content mapping. This is why they "regularly offered brief tutorials or simple tips for using the Kindle and asked the students to share their successes and failures as well" (288). The librarian's perspective was largely positive on the whole, endorsing the Kindle's ability to increase accessibility of various texts, its intertextuality, and searchability.

WPAs looking to pilot digital reading technologies in their programs will find this study beneficial as a model of benefit from the study's model of multiperspective design as well as its treatment of administrative issues (e.g. packaging of devices for students, dealing with damaged devices, etc.).

Keywords: Digital, reading, technology, engagement, collaboration, cooperation, teacher-cooperation.

Hukill, Graham Stephen, et al.

"Reading in the Digital Age: A Case Study in Faculty and Librarian Collaboration." *College & Undergraduate Libraries*, vol. 24, no. 2–4, Oct. 2017, pp. 574–94. DOI.org (Crossref), doi:[10.1080/10691316.2017.1336143](https://doi.org/10.1080/10691316.2017.1336143).

Contextualizing digital reading from a Digital Humanities perspective, this study describes an English faculty and two librarians' collaboration to incorporate a digital reading tool called eTextReader and a digital analytics tool called textAnalysis into an English classroom. Responses

were gathered from students using surveys and blog posts to determine students' experiences with reading and annotating the "The Yellow Wallpaper" in print using these tools. The study included 15 undergraduate English majors who were asked to fill out a general survey for reading preferences (for quantitative data) and complete a blog post about their specific experiences of using the two tools (for qualitative data). Their general survey showed that most students used PDFs on a computer (86%), followed by eReader devices like Kindle (57%), with online e-reading softwares like the ones offered by university libraries being used by the least number of students (29%). In terms of preference for digital versus print media based on genre, they found that students preferred print for reading textbooks (88.9%) and digital formats for reading scholarly articles (70%). Qualitative analysis of the blog posts that students wrote showed the following mixed themes: a) for eTextReader: i) a majority of students found more comfort with the physical medium, especially its tactility and smell, while a minority of them found reading digitally to be visually more appealing and engaging; ii) most students noted an overall appreciation for the affordances of the digital reader like search option and ability to copy and paste text; b) for textAnalysis: some found analytical affordances provided by this tool like word counts, collocations, and the ability to tag annotations illuminating, others confusing. Apart from the insightful data about student experiences, WPAs will find the description and discussion of the benefits of interdisciplinary collaboration enriching for the insights into affordances, constraints as well as user preferences. This data can inform decisions about which digital reading platforms to integrate in their institutions' FYC courses.

Keywords: Digital, reading, technology, engagement, collaboration, cooperation, teacher-cooperation.

Lotta C. Larson.

"It's time to turn the digital page: preservice teachers explore ebook reading". *Journal of Adolescent & Adult Literacy*, 56(4), 2012, 280-290. doi:10.1002/JAAL.00141

Larson (2012) describes how elementary school teachers have been ill-equipped to deal with a proliferation of digital reading, particularly with e-books. In this study, Larson and her graduate students collected data from 49 participants, finding that 53% thought the e-book was a helpful medium of reading a book, 16% found it unhelpful because of the various distractions online reading has, and 31% thought e-books did not make much of a difference with their reading practices. Ultimately, these varied responses speak to the lack of experience preservice teachers get in their graduate coursework on digital reading. WPAs may find this article useful because it represents the experiences of individuals who have spent time as teachers and students engaged in the practice or the teaching of digital reading. WPAs can use this information if they or their institutions are planning on implementing digital textbooks in their FYW classrooms. Because this study yielded mixed results on the helpfulness of digital reading mediums WPAs gain insight on what to expect from their faculty when they are training instructors to make a shift to teaching with digital books.

Keywords: English ed, teacher development, textbook

Mina, Lilian W.

“Analyzing and Theorizing Writing Teachers’ Approaches to Using New Media Technologies.” *Computers and Composition*, vol. 52, 2019, pp. 1–16.

Mina uses a mixed-methods approach to study self-reports of teachers (N=146) who incorporated new media technologies into their FYW classes in different post-secondary institutions in the US. They collected this data through an online survey which involved open-ended as well as choice based questions. The “mixed-methods” nature of the study stems from the fact that “Verbal data came from participants’ answers to the open-ended question while numerical data consisted of the frequencies of codes used in analyzing the verbal data” (6). The two main constructs they explore are: critical adoption of technology, which refers to “understanding the cultural and ideological implications of integrating technology in teaching” (2) and instrumental adoption of technology, which views technology as “a universal truth that does not change across social and political contexts” (2). Their major finding is that “while 23% of participants (N = 146) appeared to be critical users of technology, they are outnumbered by instrumental users” (1). For the author, this opens up questions regarding the availability and efficacy of technical professional development opportunities for writing teachers. Apart from a very useful literature review of research on critical approaches to technology adoption in the writing classroom, WPAs will also benefit from this article's suggestions about the kinds of professional development interventions that can enable faculty to become more mindful and critical users of digital technologies in their classrooms. They recommend that a training program should first do a needs assessment of all participating teachers and code their existing approaches to educational technology using the tripartite schema developed in the paper. This will help WPAs “tailor the professional development opportunities they offer to faculty” (14). In addition to this, they also suggest that instead of teaching faculty singular ways to use educational technologies, such programs should enable instructors to develop an ability to make thoughtful decisions about where, when, why, and how to use which technology based on their analysis of their changing classroom contexts. Finally, they recommend that apart from doing one-time workshops, WPAs should create opportunities for faculty to regularly reflect on their use of technologies in their classrooms in small group settings with mentors.

Keywords: Reading, digital, exercise, multimodal, technology, critical.

Rodrigue, Tanya K.

“Digital Reading: Genre Awareness as a Tool for Reading Comprehension.” *Pedagogy: Critical Approaches to Teaching, Literature, Language, Composition, and Culture* vol. 17, no. 2, 2017, pp. 235–257. DOI.org (Crossref), doi:[10.1215/15314200-3770133](https://doi.org/10.1215/15314200-3770133).

WPAs who seek to incorporate multimodal design in classrooms could benefit from building an action-oriented approach to digital literacies in their programs. Interpreting digital reading as a “design-oriented activity” Rodrigue claims that multimodal genre awareness will lead to stronger engagement from students because reading similar texts in different mediums makes students understand that meaning making from semiotic channels is essential to digital reading comprehension. Rodrigue reflects on her experience using design-oriented activities in her undergraduate 200 level writing course as evidence. After assigning a series of readings on multimodality, genre awareness, and digital reading they follow these readings up with exercises that have students read the same text in different mediums as well as hyperfiction. Rodrigue

claims that teaching genre awareness through hypertext is effective because, “Engagement with a foreign genre defamiliarized the reading act; therefore, students had more clarity in understanding what the process of reading entails and demands, as well as how genre awareness may aid in reading and reading comprehension” (246).

Thus, Rodrigue claims that students who engage with several multimodal texts, understand the affordances and limitations of different modes, and read the same text across different mediums will develop strong, recurring reading strategies to read in a digital environment (251). Since genre awareness is a key learning outcome in many FYW courses this reading will help WPAs generate ideas for assignments that can help instructors expand genre awareness activities to multimodal genres.

Keywords: Literacy, reading, multimodal, course-design, visual, exercise, cybertext, genre, comprehension.

SECTION 3: “STUDENT PERSPECTIVES”

Amicucci, Ann N.

“‘How They Really Talk’: Two Students’ Perspectives on Digital Literacies in the Writing Classroom.” *Journal of Adolescent & Adult Literacy*, vol. 57, no. 6, 2014.

This study contends that non-academic digital literacies can positively affect writing abilities in the college classroom by providing students with situated writing practice, meaning that they would have the opportunity to practice writing for real-world rhetorical situations (483). Amicucci explains that professors should make an effort to recognize students' positions in and outside of the writing classroom in order to consider how students make use of digital technologies and writing in their personal lives. Amucucci claims that practicing situated writing and experimenting with writing in different genres will enhance students' abilities to understand rhetorical contexts and think critically about their own writing practices across professional and social writing. Therefore, Amicucci calls for instructors to be knowledgeable of the ways students engage with writing in their daily lives. Ideally, WPAs are looking for ways to use students' existing knowledge in digital mediums to aid in their digital academic literacy development in FYC classrooms to make the transition to college writing easier on instructors and students. Thus, Amucucci's case studies in this article provide valuable insight and first-hand experience as to how valuable students' non-academic literacies can be in producing academic writing in the classroom.

Keywords: digital, reading, transfer, literacy, code-switching.

Coiro, Julie

“Understanding Dispositions Toward Reading on the Internet.” *Adolescent and Adult Literacy*, vol. 55, no. 7, 2012, pp. 645–48, doi:[10.1002/JAAL.00077](https://doi.org/10.1002/JAAL.00077).

Although Coiro mostly studies adolescents' digital reading, her work is useful for WPAs because student reading practices and perceptions echo throughout students' educational careers. They break down student dispositions of online reading into four questions that educators can use to think critically about student dispositions toward online reading, three of which are relevant for WPAs. First, what are positive dispositions toward reading on the internet? Coiro states, “Their

attitudes and self-efficacy relative to the internet appear to be important factors that affect motivation and reading performance” (645). Second, how can we measure disposition toward reading on the internet and school related information purposes? Coiro offers three key instruments that have been developed by other scholars and practicing educators that can be accessed on the internet: “Dispositions of Online Reading Comprehension”, “Survey of Online Reading Attitudes and Behavior”, and “Survey of Online Reading Disposition”. Lastly, they ask whether it is possible to foster more positive dispositions toward reading on the internet. They addressed this question by stating that teachers can embed conversations about reading habits into their curriculum and by “combining affective and cognitive aspects of strategy instruction” to bolster engagement and comprehension (647). WPAs would find this useful because it asks questions that make instructors think critically about student perspectives to digital reading, and it provides open-access resources on digital reading dispositions.

Keywords: digital, reading, student, cybertext, comprehension.

Evans, Ellen; Jeanne Po.

“A Break in the Transaction: Examining Students’ Responses to Digital Texts.” *Computers and Composition*, vol. 24, no. 1, 2007, pp. 56–73.

This study gathers and analyzes student responses to reading digital texts in a college-level literature course. The authors find a disjuncture between students' aesthetic reading with print and digital texts based on three emerging trends in student responses: convention, control, and closure. The authors found that within these three points, students approached digital reading and print-based reading very differently. Students reported an increase in difficulty when learning the conventions of narrative reading through digital mediums because hyper/non-linear text proved more complex than traditional narrative reading in print. Similarly, students felt they lacked control over the reading when reading digitally or hypertext media as opposed to traditional print. Finally, students lacked a sense of closure when finishing a digital/hypertext reading. Given these findings the authors list pedagogical implications that advise educators not to recreate print-based reading pedagogy when teaching digital reading. Rather, they urge educators to use pedagogy that focuses on the act of reading (aesthetic reading) and engage with creating meaningful digital texts. For WPAs this study gives insight on how students are still forming an understanding of digital reading that conflicts with their traditional print-reading instruction. By understanding students' needs, WPAs can better prepare instructors for successfully implementing digital reading and hypertext into classrooms that goes beyond a basic understanding of digital reading i.e., that primarily involves clicking on links.

Keywords: digital, reading, cybertext, comprehension, screen, fold, FTF-screen, blinking, information-load, cognitive-load.

Hirvela, Alan.

“Computer-Based Reading and Writing across the Curriculum: Two Case Studies of L2 Writers.” *Computers and Composition*, 2005, p. 20.

Hirvela (2005) contends that a particular challenge posed for L2 students who are placed in ESL writing/reading courses is that they still have to participate in coursework that requires college

level skills in reading and writing. To accommodate for this lack of consistency, this study finds that using the same digital reading and writing technologies to create a consistent literacy format across curricular engagement would help L2 students construct their English literacy skills. This study uses case studies from two L2 college students. While analyzing these students' literary practices across all their courses, the author finds that these students were always engaged in some sort of digital reading; however, "at no point in these courses was there instruction in how to use the computer to perform any of the literate acts expected of students" (352). The author acknowledges that writing courses usually engaged these students with digital literacies at the beginning of their academic careers; however, there was little evidence of digital literacy instruction in other courses. This disjuncture suggests that WAC programs should seek out a stronger connection with faculty of other disciplines to make digital literacy training useful for L2 students across their coursework. This article is valuable for WPAs who have WAC programs or are seeking to implement WAC at their universities because it provides detailed experiences of non-traditional students who could greatly benefit from a multi-discipline approach to digital literacy.

Keywords: WAC, digital, reading, literacy, L2, L1-L2, international/internationality, internationalization.

Park, Ho-Ryong, et al.

"International Students' Reading Digital Texts on Tablets: Experiences and Strategies." *Journal of Computing in Higher Education*, vol. 32, 2020, pp. 476–504.

Some WPAs face an increase in international students annually and are continuously faced with the challenge of helping ESL learners. This study relies on observations, field notes, and interviews to examine the tablet-reading experiences of four L2 international students to test whether digital reading through tablets could provide additional support for international students when reading college-level texts. The authors found that students used unique strategies with tablets that supported their overall reading comprehension. For example, students had easy access to secondary reading material on their devices that would analyze or summarize difficult text. Similarly, they could quickly search up images or other resources to build a multimodal understanding of the text. The authors conclude that the "ubiquity of mobile devices also enhances international students' communication and collaboration in ways that facilitate the learning of their everyday and academic lives, language, culture, and technology" (497).

Keywords: digital, reading, literacy, L2, L1-L2, international/internationality, internationalization.

Rodrigue, Tanya K.

"The Digital Reader, The Alphabetic Writer, and The Space Between: A Study in Digital Reading and Source-Based Writing." *Computers and Composition*, vol. 46, Dec. 2017, pp. 4–20. *DOI.org (Crossref)*, doi:[10.1016/j.compcom.2017.09.005](https://doi.org/10.1016/j.compcom.2017.09.005).

Rodriguez analyzes six case studies of undergraduate students and their digital reading and writing practices. Using think-aloud protocols and textual analyses of students' written work, Rodrigue identifies distinct patterns in their reading behavior in relation to source-based writing. They find that the students hardly employed reading strategies meant specifically for digital reading like

clicking on hyperlinks and watching videos. They also read digital texts like printed texts by moving their cursors like fingers. While students displayed above-average reading comprehension when asked to discuss the reading verbally, those same ideas never made it into their writing. Rodrigue concludes that the students in this study are beginner digital readers and questions whether students are taught how to read digitally before entering college at all. They also suggest a series of generative questions that WPAs can potentially ask themselves and instructors: How does one's development of digital reading play a role in writing? What is the difference between verbal and written invention with digital reading? Ultimately, WPAs would find this article useful because it develops a deeper understanding of student comprehension when reading digitally.

Keywords: digital, reading, write-to-learn, multimodal, screen, paper-screen, comprehension, fold, FTF-screen, blinking, information-load, cognitive-load, body, embodiment.

Sandberg, K. E.

“Hypertext: Its Nature and Challenges for College Students.” *Journal of College Reading and Learning*, vol. 44, no. 1, 2013, pp. 51–71, doi:[10.1080/10790195.2013.10850372](https://doi.org/10.1080/10790195.2013.10850372).

Sandberg (2013) reviews literature on new literacies in college reading and locates a series of challenges and instructional practices in the literature that WPAs can begin to implement into the writing curriculum. Sandberg focuses particularly on “hypertext” which they define as text that must be read on the internet because it contains embedded links and further digital information, making it different from “e-text” which is a digitization of traditional linear text. Sandberg details how hypertext literacy challenges students with new affordances which traditional (print) literacy skills and practices cannot accommodate for. These challenges include navigating through material while negotiating the medium and various sub-texts of information available. Due to the changing literacy practices that hypertext and new media present students, Sandberg suggests that WPAs and instructors should educate students about hypertext’s difference from traditional reading. Further, students should be taught metacognitive self-assessments during their reading processes that require them to ask, “Where am I? Where have I been? And, where am I going?”. WPAs would benefit from reading this article because it outlines questions that could frame class discussions on reading in digital environments.

Keywords: Cybertext, meta-cognition, screen, paper-screen, comprehension.

Xiqiao, Wang.

“Tracing Connections and Disconnects: Reading, Writing, and Digital Literacies across Contexts.” *College Composition and Communication*, vol. 70, no. 4, 2019, pp. 560–89.

This case study examines one international student’s literate experiences in two composition classes throughout the course of two years at a US University. The author positions reading as a site of meaning-negotiation in the student’s flow of literacies across personal, professional, and academic reading. The author finds that the student’s reading experience was a “multilingual, multimodal, and multilayered reading process” organized through “layers of translation and negotiation within and across language boundaries” (578). For WPAs whose programs support large numbers of international/L2 students, this study can help build a theoretical understanding about literacy practices of these students. By understanding students’ literacy practices as

negotiation through disconnected parts, WPAs can work with instructors to make L2 learners more capable of transferring knowledge to English composition classrooms and more specifically towards improving their English reading comprehension.

Keywords: digital, reading, literacy, L2, L1-L2, international/internationality, internationalization.