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The Contingency of Digital Reading: A Postdigital Literacy Ecologies Approach to Local Configurations of Play and Learning

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ABSTRACT

This article examines the concept of digital reading through a postdigital lens, challenging deterministic views of technology's impact on reading practices. It explores the contingent nature of all digital reading through the concept of postdigital literacy ecologies, attending to the complex interplay between digital and analogue reading. Drawing on a case study of an Australian high school student's experiences with a game-centered English curriculum, the paper demonstrates how digital reading practices within one local configuration were constituted intra-actively with multiple phenomena, including curriculum and schooling, materiality, multisensory embodiment, and game design. The analysis reveals the blurring of boundaries between old and new literacy practices, the entanglement of analogue and digital elements, and the simultaneous rupture and continuity in reading experiences. The paper argues that understanding digital reading through the framework of postdigital literacy ecologies challenges both techno-optimist and techno-alarmist narratives associated with digital reading, revealing the complex, situated nature of contemporary reading practices. It calls for a reconsideration of how we conceptualize, teach, and assess reading in the postdigital age, emphasizing the need for pedagogies that acknowledge the entangled nature of digital reading.

1 | Introduction

In an era where digital technologies are deeply interwoven into the fabric of everyday life, simplistic narratives about the impact of digital media on reading practices persist. These narratives play out in academic and public debates about young people's digital lives amid claimed negative impacts on their social, cultural, and intellectual development. The concern is that digital reading is subsequently not taken seriously as a complex literacy practice and that learners will not be given opportunities to engage aesthetically, creatively, and critically with digital reading in schools.

Understanding digital reading in the postdigital age requires moving beyond deterministic and representationalist logics regarding technology's effects. Instead, we need a more nuanced perspective that recognizes digital reading as an entangled practice, shaped by complex interactions between cognitive processes, digital platforms, sociocultural contexts, and material conditions. This paper takes its lead from Coiro's (2021) call for scholarship which resists overemphasizing the medium of text delivery and goes beyond oversimplifying digital reading as a "singular entity analogous with reading text on a screen" (p. 12). It responds to Coiro's suggestion that we need to more specifically define and operationalize terms that can support varied views of digital reading by working closely with ideas from postdigital theory to further develop theoretical and empirical understandings.

One way to rethink digital reading postdigitally is through Bhatt's (2023) notion of postdigital literacy ecologies. Building on Barton's (1994) ecological metaphor of literacy, which emphasizes literacy as embedded in various types of human activity, Bhatt argues that technology is not merely an enabler of

one form of literacy, but that it should be considered as a part of a larger assemblage of mutually co-creating phenomena. The digital and nondigital are deeply entwined, and the postdigital is offered as a conceptual lens through which to investigate the complex relationships between technology, society, and individuals. Postdigital literacy ecologies offer a framework for understanding digital reading, one which is sensitive to a field of possibilities and entanglements that are not static or singular, as some technological determinists suggest, and to make clear, as Barad (2007, 74) argues that all "entanglements are highly specific configurations".

This paper asks what a focus on local configurations of digital reading, namely the play and study of digital games in high-school English classes, reveals about the importance of approaching human-tech relations from a postdigital perspective. It begins by exploring the challenges associated with defining digital reading, before introducing and critiquing the determinism that frames much of how the relationship between the digital and reading is imagined. It then explores efforts to understand contemporary digital reading practices from the perspective of the postdigital, demonstrating how a focus on human-tech relations, which emphasizes the entanglement of phenomena reveals a complex web of relations that resist simplifying digital reading practices or effects. The paper then works empirically with one Australian high-school student and their in-school and out-of-school experiences of print and digital reading, employing Bhatt's postdigital literacy ecologies to focus attention on the "entangled state of agencies" (Barad 2007, 23) that shape their postdigital reader becoming.

2 | Definitional Dilemmas

Setting the boundaries of what we mean when we speak of digital reading is tricky business. Coiro (2021, 12) defines digital reading as "a range of multifaceted meaning-making experiences whereby readers engage with multiple texts for particular purposes that are situated in diverse contexts". For Baron (2017), digital reading refers to reading on a screen, while for Salmerón et al. (2018) it involves a range of advanced skills, including search and navigation, the ability to integrate multiple pieces of information and multiple formats, and critical evaluation. Others have coined their own terms to capture certain nuances of digital reading, such as silicon literacies (Snyder 2002), which captures the multiple interconnected practices required to navigate and participate in digital and networked environments, and hyperreading (Hayles 2010), to describe fragmented and nonlinear, rapid, scanning-based, and attention-intensive activity. It is noteworthy that many studies of digital reading fail to define the term (see Singer and Alexander 2017, who found that only five of 35 empirical studies they reviewed included a definition of digital reading). This has led to calls from some scholars for greater clarity and ecologically valid descriptions about what the term digital reading encompasses (Coiro 2021, 10).

From a postdigital perspective, definitional promiscuity, or even the absence of clear definitions, can be productive. While definitions can provide clarity, they can also impose artificial boundaries on inherently fluid and complex phenomena. For example, Yang and Song's (2025) systematic review of K-12 students' performance in digital reading practices in the US utilized such a narrow definition of digital reading that only 31 studies met the inclusion criteria. In the spirit of poststructural and postdigital thinking, I approach the definition of digital reading with caution, recognizing that any attempt to neatly define it risks oversimplification. Though I am inclined to adopt perspectives on literacy that align with New Literacy Studies scholars (see Street 2003), which views reading as a socially situated practice that encompasses a wide range of meaning-making activities across diverse textual forms and modalities, the ontological implications of naming phenomena are not benign.

Building on these perspectives, we must acknowledge the challenges in defining digital reading as a discrete phenomenon. Drawing on Barad's (2007) concept of agential realism, this paper positions digital reading not as a fixed entity with inherent properties, but as a phenomenon that emerges through intra-actions of various material-discursive practices. Our attempts to define digital reading are not merely descriptive but participatory in shaping the phenomenon itself. This approach resonates with that of other scholars of digital reading, such as Engberg et al. (2023a), who in their aptly titled book *The Digital Reading Condition* make the case for paying attention to the conditions of digital reading, which Engberg argues cannot be settled by fixed definitions of digital reading or of digital materials (Engberg 2023, 21). Furthermore, as Jandrić (2023) notes, all concepts run across fields and disciplines, their meanings shifting depending on context. This fluidity resists neat, essentialist views in favor of what Fawns et al. (2023, 81) describe as a "messier view of socio-technical relations." One characteristic of postdigital scholarship is acknowledging and resting with the messiness. This means that the mess and indeterminacy that often accompany attending to the digital is not there to be solved through clarification, but rather "assumed as an ontological condition" (Mortsell and Gunnarsson 2023, 174). From a literacy education position, this perspective allows us to consider school-based digital reading as a dynamic entangled practice that refuses reduction to the lowest common-denominator view that all engagement with digital technology is harmful.

3 | Digital Reading Determinism

Simplified views regarding the relationship between education and technology persist (Jandrić and Knox 2022), and limit the capacity for digital reading, in all its forms, to be treated seriously in schools. Jandric and Knox argue that these simplified views can be characterized by two problematic philosophical assumptions: technological determinism and instrumentalism. First, technological determinism, the belief that technology somehow determines human societies, values, structures, and individual behaviors, is used to produce narratives about how using technologies will improve learning. While Jandric and Knox focus on the ways that technological determinism characterizes discourses of digital technology in largely positive terms, technological determinism also offers a fundamental logic utilized to criticize young people's engagement with digital culture (e.g., Carr 2010; Haidt 2024). Second, instrumentalism is posited as a view that technologies are neutral tools which can be deployed to realize the intentions of designers or users, but which fails to acknowledge

our co-constitutive relationships with technology. The simplified view that Jandric and Knox critique is useful for understanding the causal logics at work in analysis about the harms (intellectual and cultural) caused by digital technologies to reading and readers.

Intellectual decay has been established as one effect of digital reading. Baron's *Words Onscreen* (Baron 2015) is one example of this position, where print and digital reading are pitted against each other, with the former clearly established as superior. While print reading "invites us to linger" (p. 152), screens "hasten us along". Baron, referencing Hayles (2012) distinction between close/slow and hyper-reading argues that digital reading is too fast and needs to be slowed down. The range of digital literacies that now accompany e-reading and digital academic reading might be efficient, says Baron, but not great for "careful reading" (Baron 2015, 40). Reading online offers too many distractions. It is too unfocused. For Wolf (2018), reading on digital screens encourages deficient and inferior reading practices, such as skimming (p. 84), and has contributed to what they refer to as cognitive impatience (p. 92), a term meant to capture the claimed inability of young people to focus in a sustained manner on texts. Not to be overlooked are claims about mental health decay. Haidt's (2024) work, along with a number of other psychologists (see Orben and Przybylski 2019; Twenge 2023), supports the argument that digital technologies, including their associated digital literacy practices, are producing an anxious generation whose brains are literally being rewired, causing an epidemic of mental illness.

Another claimed effect of digital reading is its contribution to cultural decay. Here, Han's (2022a) critique of digital culture captures concerns with the merging of globalization and digital technology proliferation to suggest that culture is becoming unbound, unrestricted, and unraveled. While culture was once held together through a structure sustained by "conventional texts or books" (p. 8), we have entered the age of hyperculture, where a hyperspace of culture is organized by links and network connections. Like his other critiques of the digital world (see Han 2022b), Han is concerned with what is lost when the common horizon of experiencing that characterized pre-digital life is fragmented by what he terms hyperculture. Baron (2015) makes similar claims about the loss that comes with online participation, suggesting that a culture lived predominantly online, "has the danger of becoming a culture out of sight and out of mind" (p. 156). For Haidt (2024), who is well-known for his critique of digital culture, a phone-based life pulls us "downward" (p. 215), causing spiritual harm, particularly to adolescents. To further his argument that young people need to move "upward" and closer to God, he lauds the importance of engagement with so-called great literature. For Wolf (2018), what is at stake is nothing short of the future of the empathetic individual, where the gains from reading are a product of the relationship between "the reader's expertise and the content being read" (p. 58). Time spent reading screens takes away from time that could be spent engaging with the 'right kinds of literature', a position long argued by conservative literary and cultural critics such as Matthew Arnold (1869) and F. R. Leavis (1930), who expressed concerns about mass culture and popular media. In case we were in any doubt of Wolf's total faith in a transactional account of reading and print-centric literature, she makes it clear that the "language and thought atrophy" (p. 86) caused by youth digital reading makes them more susceptible to religious extremism.

What techno-alarmist accounts of digital reading share is their faith in Cartesian logic. Within such a paradigm, complex phenomena are broken down into simpler, constituent parts; the physical world is viewed as machine-like, and the thinking subject is separated from the object of knowledge. Barad (2007) suggests that those working within such a worldview are engaged in 'Cartesian cuts' which attempt to disentangle or fetishize the phenomena, for example, treating digital technology and reading as separate, pre-existing entities that merely interact. Claims about digital reading as the cause of intellectual and cultural decay presuppose a clear distinction between digital technologies and human cognition or culture. These perspectives fail to account for the complex interplay between technological tools and human practices and subscribe to what Burnett and Merchant (2020, 3) argue is a tendency to depict the digital as "unitary, free-standing, and in some ways detached from the social, cultural and material conditions of use."

Barad's (2007) theory of 'entanglements' offers a more nuanced way of engaging with social and material phenomena. Rather than viewing digital technologies and reading practices as separate entities that interact, we can consider them as mutually constitutive, emerging through their intra-action. This will require conceiving of meaning not as something to be found in texts, but rather as "made cooperatively as the user practices the texts" (Rowsell 2025, 21). For example, concerns about digital reading leading to intellectual decay could be reframed as an exploration of how new reading practices are co-evolving with digital technologies, producing new forms of cognition and engagement with text. Similarly, Han's (2022a) critique of 'hyperculture' could be understood not as a loss of a pre-existing cultural structure, but as the emergence of new cultural formations through the entanglement of digital technologies and social practices. This perspective encourages us to examine the complex ways in which our reading habits, cognitive processes, and cultural practices are being transformed in conjunction with technological developments, rather than simply being impacted by them, and as others have found in their own work on digital reading (see Apperley et al. 2016; Colvert et al. 2024; Nash 2025; Thompson and Elwick 2025), highlights the importance of recognizing that humans have agency and intentionality when engaging with digital and non-digital texts, but that these entities also inflect with and shape outcomes.

4 | Literacy and the Postdigital Turn

The concept of the postdigital has emerged as a critical response to the ubiquity of digital technologies in contemporary life. The 'post' in postdigital does not signify a period after the digital, but rather a state of critical reflection on the digital era (Peters and Besley 2019). It represents a move beyond the initial fascination with digital technologies (Cramer 2015) towards a more nuanced understanding of their entanglement with social, cultural, and material realities (Fawns et al. 2023). The postdigital perspective challenges digital dualism, rejecting simplistic binaries between online and offline, virtual and physical. Instead, it recognizes the hybrid nature of our experiences, where the

digital is so deeply embedded that it becomes unremarkable. This conceptual shift encourages a more critical, contextual approach to understanding technology's role in society, moving away from technological determinism and towards a recognition of the complex interplay between human and non-human actors in shaping our digitally-mediated world.

L1 English, literacy, and literary studies scholars are increasingly engaging with postdigital theory as a means to understand how contemporary reading practices have become entangled with the digital. While some capture this entanglement through investigation of literacy practices from posthumanist and sociomaterialist perspectives, without explicit reference to the postdigital (see Burnett and Merchant 2020; Cárdenas Curiel et al. 2025; Mills 2010), others have engaged directly with the concept to highlight the characteristics of: postdigital literary objects (Abblitt 2019), postdigital literary literacies (McLean Davies et al. 2020), post-digital books (Anderson and Pold 2014), postdigital interfaces (Jayemanne et al. 2016), postdigital storying (Colvert et al. 2024), postdigital play (Bacalja et al. 2024a, 2024b), platforms (Robinson 2022) and screens (Rowsell 2025). These various usages coalesce around the belief that technologies are always already entangled within complex sociotechnical assemblages (Fawns 2019), co-shaping, and co-shaped by the cultural, political, economic, and environmental contexts they emerge from and operate within.

Particularly fruitful for how this paper intends to work empirically with one local configuration of digital reading is Bhatt's (2023) notion of postdigital literacy ecologies. Building on earlier work from Literacy Studies, which has sought to move from cognitive-based approaches to literacy that focus on how the brain processes text, to more ethnographic investigations, Bhatt adopts and adapts Barton's (1994) ecological approach to literacy research. With a strong emphasis on context, and a sensitivity to the social, cultural and material aspects of literacy practices, Bhatt (2023) suggests the need for a theory of (digital) literacy where technology is not merely an enabler of certain kinds of practice, but rather "one component of a larger literacy assemblage where both human agency and subjectivity play a critical role in forms of mutual co-creating of texts and technology" (p. 3). The 'ecology' of postdigital literacy ecologies is crucial to challenging deterministic understandings of the causes, consequence and outcomes of engagement with the digital. An ecological approach to literacy research centres the complex relationships between literacy practices and their cultural and historical contexts.

While this paper explicitly brings the postdigital in relationship with literacy, it would be a mistake to suggest that scholars have not already been working to understand digital reading in terms of entangled material practices of knowing and becoming. This perspective, grounded in empirical research focusing on practices rather than objects, reveals reading as deeply embedded within interconnected social, material, and technological systems. Four empirical accounts illustrate this ecological orientation. Pianzola's (2021) study of the way people read socially through digital media found that specific media technologies and platforms did not unequivocally have good or bad effects, but rather that the quality of social interactions was bound up in the context, the kind of content, and the attitudes of the people involved. Murray's (2018) exploration of online reading formations highlighted how digital environments reshaped the materiality and sociality of reading, democratizing cultural authority. Driscoll's (2024) inquiry into the practices of contemporary recreational readers reported their reading converging with media ecosystems, where readers navigated fluidly between online and offline spaces, maintaining agency while negotiating platform constraints. And Rowsell's (2025, 29) examination of seventeen people's experiences with screens concluded not that these people were dupes of the algorithms and automation that sit behind the interfaces, but rather illuminated digital reading practices as always situated, contingent, and negotiated. These approaches collectively underscore the importance of viewing digital reading not as a discrete activity, but as a complex, multidimensional practice entangled with broader cultural, material, and political-economic phenomena.

Bringing Rowsell's (2025) suggestion that postdigital approaches offer potential new forms of education and opportunities to redefine critical literacy alongside Coiro's (2021) aforementioned call to operationalize the terms that support varied views of digital reading, we turn now to a case study from an Australian high school English classroom to explore the productiveness of a postdigital literacy ecologies framework. Despite scholarly attention since at least the mid-1990s on the digital games and digital reading nexus from the perspective of schooling (see Beavis 1997), such teaching and learning is yet to be taken seriously as a focus of school English education and offers a local configuration ripe for closer attention.

5 | A Local Configuration of Digital Reading: The Play and Study of Digital Games in the English Classroom

In late 2021, teachers at Lakeview High, a senior secondary school in Australia, contacted me to collaborate on designing and implementing a game-centered English curriculum for senior English students. This invitation emerged from the teachers' recognition that many students were engaged gamers whose out-of-school gaming practices remained largely disconnected from their formal English education. The purpose of the project was to work together to engage with pedagogical challenges and opportunities associated with replacing print-based texts with digitally-mediated narratives. The resulting collaboration connected closely with my existing work exploring how digital games function as texts within school English classrooms (see Bacalja and Nash 2023), and more fundamentally, how digital reading practices are constituted within postdigital literacy ecologies. This section outlines the methodology and research design of the project, detailing the context, participants, data collection methods, and analytical approach employed.

5.1 | Methodological Framework

This study adopts a post-qualitative inquiry approach that, while drawing on traditional qualitative methods such as interviews and document analysis, is fundamentally oriented by posthumanist theoretical commitments. Post-qualitative inquiry resists the humanist assumptions embedded in conventional qualitative

research, instead embracing methodological flexibility and reflexivity about the researcher's role in knowledge production. This approach is particularly suited to the research question guiding this investigation: How can we understand the digital reading associated with the play and study of videogames in the senior English classroom? Rather than seeking to extract predetermined meanings or isolate variables, the methodology attends to the complex entanglements and intra-actions constituting digital reading practices within this specific educational context.

Drawing on Karen Barad's (2007) theory of intra-action, the study recognizes that entities, including students, teachers, games, curricula, and technologies, do not precede their interactions but rather emerge through their mutual entanglements. This theoretical orientation shapes both data collection and analysis (further details below), encouraging attention to how meaning and practice are co-constituted through the complex web of relations that characterize postdigital literacy ecologies, rather than treating digital games as discrete objects with predetermined effects on reading and learning.

5.2 | Research Context and Site

Lakeview High is a senior secondary school located in a middle-class suburb within a progressive region of an Australian capital city, catering to students aged 17–18 completing their senior school certificate, a prerequisite for university entrance. The school positions itself as committed to innovative educational practices, a commitment reflected in its principal's public messaging and institutional culture. This emphasis on innovation created the conditions for a collaboration between me, a research-active academic with over a decade of prior English teaching experience, and Mr. James, an experienced English teacher and self-identified gamer, to co-design a game-centered English curriculum.

The co-design process, undertaken in late 2022, began with iterative discussions about how to integrate popular digital games into the senior English curriculum while adhering to state-mandated standards and learning outcomes. Mr. James and I shared resources, brainstormed ideas, and reflected on ways of teaching digital games that we had both experimented with in the past. A more sustained in-person course design process (which spanned three months) involved analyzing the curriculum, writing lesson plans, watching game playthroughs, and preparing assessment tasks. Through this process, we collaboratively developed a 14-week semester-long course that replaced traditional print-centric texts with five carefully selected digital games (details of each are explored as they arise in the Findings), designed to meet curriculum requirements while engaging with texts central to students' contemporary digital lifeworlds. This designed course retained the practices of a traditional book-based model of instruction (prescribed 'digital' texts, close reading, discussions, enactments, low and high-stakes writing), but also included novel digital literacy practices necessary to play the prescribed games. A detailed outline of the activities of the course has been reported elsewhere (see Bacalja 2025).

The co-designed course was intended to meet the demands of the prescribed state curriculum (ACT Board of Senior Secondary Studies 2014). The curriculum required that the designed courses enable students to:

- Understand the relationships between purpose, context, and audience and how these relationships influence texts and their meaning,
- Investigate how text structures and language features are used to convey ideas and represent people and events in a range of texts

The mandated standards do not distinguish between digital and non-digital reading, and instead refer to broad reading comprehension skills and activities, including: undertaking close analysis of texts, examining how each text relates to a particular context or contexts, analyzing and evaluating how similar themes, ideas or concepts are treated in different texts, and analyzing the techniques and conventions used in different genres, mediums, and modes.

5.3 | Participants

The *Reading Digital Games* course was implemented across three senior English classes at Lakeview High, involving approximately 60 students in total. However, recruitment for the research study proved challenging, with only six students and their parents returning signed consent forms. This low uptake reflects broader challenges in educational research recruitment, particularly when participation requires parental consent for students under 18. For the purposes of this paper, I focus exclusively on one student participant, David, whose rich and detailed accounts of his digital reading experiences both within and outside the classroom provided particularly generative data for exploring postdigital literacy ecologies. I also draw, to a lesser extent, on interview data with the participating teacher, Mr. James, and my own observational notes from the co-design phase of the project.

At the time of the study, David was a 17-year-old Australian student completing his final year of secondary schooling. When asked to describe himself as an English student, David reflected: "I think I'm bad and good at English...I think I've gotten a bit better." He articulated a genuine appreciation for storytelling across multiple media, describing himself as someone who enjoyed reading books, appreciated poetry, and identified as a "film-buff." However, David acknowledged struggling with the formal demands of academic writing, particularly "the formatting and the structure." Significantly for this study, David identified as a lifelong gamer, stating: "I've been brought up on games my whole entire life." His gaming history included extensive childhood and early adolescent engagement with various platforms and titles, though by the time of the study, he had reduced his gaming to focus on schoolwork, with plans to resume more intensive gaming after completing his final examinations.

5.4 | Data Collection and Analysis

Data collection spanned 18 months and employed multiple qualitative methods to capture the complexity of the curriculum

co-design and the experiences of students in the *Reading Digital Games* course. Semi-structured interviews with Mr. James were conducted at key points: during the co-design phase, before the intervention, throughout the *Reading Digital Games* course, and following its completion. During these interviews, Mr. James spoke at length about both his own teaching and the backgrounds and experiences of the participating students. Individual and group interviews (up to an hour in length) were conducted with participating students. The study had human research ethics approval from the author's institution,[1] and all participants in the study (including parents of those students under the age of 18) were provided with plain language statements and consent forms. Additionally, I collected formative and summative work samples, including play journals, assessment responses, and written reflections. Curriculum and policy documents from both the state and school levels were gathered to contextualize the institutional constraints and affordances shaping the course. Finally, researcher notes documenting reflections during the co-design phase and contextual details were maintained throughout the study period.

Data analysis was guided by Karen Barad's (2007) theory of intra-action, which posits that entities emerge through their mutual entanglements rather than precede their interactions. A thematic analysis was employed with themes selected both a priori, informed by what prior studies of game literacies in school contexts have identified as significant phenomena in the ecology (see Bacalja and Nash 2023; Bacalja et al. 2024a; Apperley et al. 2016; Garcia 2020; Grimes 2021), and a posteriori, after reviewing the data and reflecting on the researcher's notes. Rather than treating these themes as fixed categories, they functioned as analytical lenses through which to examine how meaning and practice emerged through the intra-actions of various parts of the literacy assemblage that co-constituted digital reading in the *Reading Digital Games* course, namely: curriculum and schooling, materiality, multisensory embodiment, and game design. This approach acknowledged that the act of analysis itself constitutes an "agential cut" (Barad 2007), recognizing that our analytical framework is performative, actively shaping the phenomena under investigation.

6 | Findings

6.1 | Curriculum and Schooling

David's digital reading during the study was in a dynamic relationship with the imperatives of schooling and the expectations of the school subject English. The educational jurisdiction in which the *Reading Digital Games* course took place mandates key knowledge and skills that must be taught and assessed in students' final year of English (ACT Board of Senior Secondary Studies 2014). For example, through the investigation and evaluation of the relationships between texts and contexts, students are required to undertake close analysis of texts (ENGT01) and examine how each text relates to a particular context or contexts (ENGT02).

The expectation is that schools and teachers will translate the key skills and knowledge mandated by the state curriculum into locally-designed curricula. Reading the five digital games selected for study in the *Reading Digital Games* course could not be separated from the educational system's attempt to standardize learning across all schools in the district, nor could reading be isolated from the preferences of the classroom teacher. Hence, the constraining effect that accompanies such standardized systems (Brass 2015; Kostogriz and Doecke 2013) was in effect at Lakeview High.

Within this context, reading included viewing and comprehension practices necessary to progress through each game to completion. However, this form of meaning-making was not the priority. To the contrary, the school's English imperative to analyze texts, and not simply enjoy them for aesthetic or entertainment purposes, was evident throughout David's reflection on the unit. David recalled an activity where he was required to employ literary theory to analyze the game *Firewatch* (Campo Santo 2016), a first-person narrative adventure set in the 1989 Wyoming wilderness about a fire lookout named Henry. David selected an eco-criticism lens to explore the character of Ned Goodwin, stating:

> And I found out actually this really good source when I was researching about Ned Goodwin's psychological analysis and how he used the nature to cope with his PTSD from the war. But the sense of loneliness in the woods kind of turned bad as well, made him kill his son. But that's kind of the change that Yellowstone did to Ned Goodwin.

Furthermore, when responding to a question about the validity of studying games like *Firewatch* in the English classroom, David said:

> ... this game has so much art in it and I never knew that, but now I know. But I really appreciate games like this because it's a true story. And this is what I would call art. I wouldn't call *Call of Duty* art, but I'll call *Firewatch* art because it just has everything that you would want in a story. It has the character at the start and you get some sort of change of identity at the end. You have beginning, middle, and the end, whatever that means. And then you have your actions and your characters and everything.

David is describing a form of textual appreciation often identified as a goal of school English, where the subject is tasked with helping students to appreciate the aesthetic qualities of texts.

The mandated curriculum also set clear requirements regarding the process of assessment, which shaped how the forms of digital reading were to be valued. Policy documents stated that, "school-based continuous assessment means that students are continually assessed throughout years 11 and 12, with both years contributing equally to senior secondary certification" (ACT Board of Senior Secondary Studies 2014, 5), and such assessment is subject to "a robust, collaborative, and rigorous structured consensus-based peer reviewed moderation process". Such systems framed how the assessment of reading occurred.

Knowing that students would be required to complete assessment tasks that were standardized across his school, irrespective of whether students were studying print or digital texts, Mr. James required his students to take notes during moments of gameplay in what he termed their "play journal". Despite claiming that he "really wanted them to have the experience of discovering the text for themselves", Mr. James' pedagogical orientation to notions of 'ideal' digital reading necessary to prepare for assessment tasks led to quite specific instructions for students. Mr. James recounted the instructions he gave students prior to gameplay:

> I want each group to have one document, and you'll all work in it. You can designate a scribe who'll be the main person for that lesson, or you can all work in it simultaneously...when you're going through the rest of this [game] level, I want you considering dot, dot, dot, so make these dot points as you go, and we'll talk about it towards the end of the lesson.

The 'dot, dot, dot' here represents key features of the text that the classroom teacher wanted students to pay attention to and record notes about as they played. The irony is that extensive references in the researchers' notes during the co-design phase highlighted Mr. James' admiration for free play and exploration as practices for meaning-making. Thus, one form of digital reading supported making sense of in-game semiotic systems to progress the story, while another form was used by students to identify key elements from the game that could be recorded in their play journals.

As Hayes reminds us, "people shape, and are shaped by, culture and technology" (Hayes 2021, 6), and this was evident in the ways that David's experience of digital reading with, through, and about digital games was co-constituted with the emergence of curriculum and assessment interpretation and enactment. This coheres with other case studies involving reading digital games in schools that have similarly noted how curriculum obligations and traditional ways of thinking about texts define, and ill-define, possibilities (see Bacalja 2025; Elf 2023).

6.2 | Materiality

Understanding the digital reading condition includes attending to the materiality of the reading situation (Engberg et al. 2023b). Material configurations functioned as active participants in the reading process, enabling or constraining specific forms of engagement. Contrary to those scholars who see materiality as fixed and digital materiality as having a negative effect on a range of intellectual activity (e.g., Baron 2015; Haidt 2024; Wolf 2018), David's account of the material reveals active and dynamic processes of materialization. The intervention classroom utilized three gaming consoles, Nintendo Switches, each connected to a TV placed on a movable trolley with wheels. I asked David specifically about how digital games in the study were played. One question related to the game *Unpacking* (Witch Beam 2021), a puzzle game that requires the player to unpack a female character's possessions from boxes into various rooms in a new dwelling. Each unpacked item must fit into a room in the new apartment. David responded:

> Yeah, so I just sat there. It was maybe six people [to a console] and we just did a room each. So, it was just five of us [watching]. But yeah, just a room each...we were just looking up [at the game being played on the tv]. It was good fun. Watching and talking...There was some little activities that we had to fill out, but we did that at the end once we'd all taken it in.

Rather than game controllers, games consoles or the TVs on which games were played having pre-determined meaning or effects, what David describes is a digital reading condition where materiality is negotiated. Matter matters, as Hayles (1999) argues, and it is agentive, "not a fixed essence or property of things" (Barad 2007, 137).

The arrangement of such matter was not accidental. The use of three game consoles in the classroom, and not one or two, meant smaller groups of students allocated to each screen and more opportunities to play. For Mr. James, this made digital reading during moments of gameplay "a relatively social process. They can work together". Reflecting on the unit post-intervention, Mr. James went as far as to claim that "I think without the Switch [consoles], the unit wouldn't have worked". While I am inclined to disagree slightly, believing that the unit might simply have worked differently in response to different material-pedagogic configurations, Mr. James' conclusions about the material arrangements through which digital reading occurred are important. The presence of such (digital) matter in an English classroom might easily be mistaken for obstacles to the reading goals of the English curriculum. Instead, we are reminded here that all acts of reading are realized materially. Or to put it differently, the specific material conditions of the reading situation actively shaped what could be read, how it could be understood, and what forms of engagement were possible.

If we need further proof that digital and material artifacts do not unequivocally have good or bad effects (Pianzola 2021, 19), let us consider further David's account of reading *Unpacking*. I asked David how he came to understand the story from *Unpacking* and how much this understanding was scaffolded by the classroom teacher.

> I think it was more chatting because we kind of pointed out things that I then spotted and then someone else might've spotted. And then we connected the two things together. Obviously, Mr. James helped us in the context of some little things around, you know, whether it be some little symbolisms or whatever it may be. But it was mostly just us talking and working it out as a group, and I think we were all pretty much entertained.

The materiality of the digital reading context, sitting around a single TV, sharing a game controller, taking written notes, co-constituted reading as a social and relational experience.

Elsewhere, Brady Nash and I (see Bacalja and Nash 2023) have reviewed how English teachers utilize digital games in school English classrooms. We found great differences in the materiality of the contexts and, not surprisingly, that different configurations of materials contribute to different outcomes. For example, contexts where students were not allowed to play digital games at all (and instead watched the teacher playing) or where students played on their own devices with headphones, tended to involve less social interaction and student talk. Much like research into digital social reading (see Murray 2018; Pianzola 2021), which suggests that the social dynamics enabled by digital media and technology, in combination with print-reading, co-constitute the reading experience, the 'learning' in David's context took place through a multitude of phenomena which make attributing causal effects (positive or negative) to any single phenomena (analogue or digital) difficult. What is more, as Garcia (2020) found in their own research on analogue gaming literacies associated with table-top gaming, understanding the cultural practices associated with (analogue) materialities can be difficult to separate out from pervasive and ubiquitous digital literacies. The experiences of students in the *Reading Digital Games* unit affirm that reading engagement is always materially situated and contingent on specific configurations of objects, bodies, and spaces.

6.3 | The Sensing Body

Another part of the assemblage that co-creates digital reading is the bodily experience across multiple sensory modalities through which our understanding and interaction with the world are fundamentally grounded. Multisensory embodiment refers to the cognitive and sensory processes by which the brain integrates phenomena from multiple senses, such as vision, touch, and proprioception, to create coherent meanings and experiences. The sensing body is always present in all kinds of reading (Have and Pedersen 2023). Comprehension occurs through sensory embodiment, in the present and through the past. I asked David about his experiences in the unit, noting the differences between a more traditional text study focused on reading a book and having to play the games selected by his teacher. He responded:

> Well, let's start off with when I'm playing with the controller, you are the character. So, there's kind of that immersiveness that you don't get from a film. Yes, a film might be really immersive, but you don't actually get a control of characters, like you don't get to control them. You're basically like a little bug in their mind at the end of the day, you're controlling them. And you kind of emphasize (sic) more because it's happening to you rather than you're watching it happen in a way, that's if you're playing and you kind of experience that, like you are the character and you experienced all these events happening around you.

David's description reflects a kind of discourse about embodiment that has long been associated with digital games. Gee (2005, 2006) referred to this embodiment in terms of a projective identity, noting how gamers become committed to a new virtual world through their commitment to their new identity (that of virtual characters), and through this commitment, learning occurs. This commitment is enhanced by story elements which are coproduced jointly by real world players and virtual world characters. What is noteworthy in David's account of sensemaking through such immersion is that he doesn't position such activity as being superior or inferior to print-based texts; an easy conclusion to have drawn given the stale nature of much print-centric text selection (see Bliss and Bacalja 2021; Jogie 2015). This was in contrast to Mr. James' reflections on the unit, who attributed some students' slow progress through game narratives to a lack of gaming experience, "I had one group ostensibly two hours behind the other groups, and that was because they could not read the compass [on the screen]. They did not know how to navigate". Perhaps youth bodies are not homogenous sensemaking entities after all.

Importantly, David's digital reading must be understood historically. To understand his in-class reading comprehension, we must also reach into the past and recognize embodied schemas internalized through prior gaming practice. Gameplay and its associated reading practices have been central to David's life from a very young age. He tells us:

> I've been brought up on games my whole entire life, ever since [the Nintendo] DS, and my brothers have always been interested in Nintendo and all that. And then the PS PlayStations, I've always had a PlayStation in my house, like a PS2, PS3. And then DS like playing the *Pokémon*, and then Xbox. When I was 12 it was *Fortnight*. And then later on, not so much now, but at 15, 16, exploring actually a lot of RPGs. Like the *Star Wars* I really enjoyed.

These experiences are important for much more than the scaffolding they provide for the mechanical operation of game controllers. David's classroom digital reading cannot be separated out from his familiar and familial at-home reading of games. Mattering, what Barad (2007) describes as the process where phenomena come to matter through ongoing intra-actions, reaches backwards for David so that an experience like watching his peers play games in the classroom is inseparable from his experiences with his brothers, "I would just watch them play...my brothers have always been playing". Unlike ahistorical claims so-often attributable to youth digital cultural practices, personified by the moral panic associated with playing digital games (Grimes 2021) digital reading comprehension from a historically situated multisensory embodiment perspective reminds us, as is often emphasized by postdigital scholars, that digital determinism is an inadequate frame for inquiry.

6.4 | Game Design Agency

While claims about digital games point to a game's design as the catalyst for understanding the effects on learning, whether positive (Gee 2003; McGonigal 2011; Prensky 2007) or negative (Anderson et al. 2010; Carr 2010; SooHoo 2022), positioning

game design as just one part of a literacy assemblage reveals a more complex picture. Both the game and other phenomena in the assemblage have agency.

For example, I asked David about his experience studying the game *Stanley's Parable* (Galactic Cafe 2013), a first-person adventure game where the player takes control of Stanely, a simple-minded office worker who turns up one day to discover all his co-workers have mysteriously vanished. David was fascinated by the game designer's portrayal of the mundaneness of the everyday:

> I love how it judges you so hard, but it's so reflective of modern society in general. We go to work. We get up. We go home. Maybe we have a wife that we kiss when we get home. We make dinner and then we start the whole thing again. And this is so many people's lives.

Given David's discussion of the game's themes aligns closely with the intentions of the designers and is responsive to the way play is structured in the game, we might conclude that game design carries a great deal of agency in this context. And it does. But in the tradition of theories of reading comprehension which emphasize the active role of the reader in creating meaning from texts (i.e., Bakhtin 1981; Barthes 1977; Rosenblatt 1938), the digital reading condition is one which involves more than the passive consumption and reproduction of ideas from the games studied.

Whether we are characterizing David as a reader, player, or student, he maintains agency. His interpretation of *Stanley's Parable* is intertwined with his experience and comprehension of other texts. David's praise for this game was immediately followed by comparisons with the Hollywood fantasy-comedy drama *Stranger than Fiction* (Forster 2006), a film about a man who suddenly becomes aware of a voice narrating his life. Like *Stranger than Fiction*, a disembodied and omniscient narrator guides the player through *Stanley's Parable*. The connections David draws across the two texts are an example of what Kristeva (1986) articulates through the concept of intertextuality, where readers' understanding of a text is shaped by their knowledge of other texts. Once game design is considered as one part of a broader assemblage, we can become less fixated on how a game has been designed and focus instead on practices. Or, as Rowsell (2025, 54) argues in conclusion to her own inquiry into the digital, it is not so much about the screens but how people use them.

What is at play when we engage with game design's association with digital reading is the relationship between affordance and constraint. David himself captures one aspect of this relationship when responding to a provocation from me about the linearity of the games selected for study in the unit.

> I know you end up in the same sort of space, even though there are different types of endings. But there's still a choice in it. And you still got to learn about the characters through the choice. And that's what made it so different because each person's got to be different. I know it ends up in maybe the same beginning, but the little things and you kind of learn through it in your own basis and your own understanding of life. Because some of the things maybe that you've pressed may have not been pressed by someone else who've come from a different background.

Speaking specifically about *Firewatch*, David affirms his belief that games provide choices which contribute to different experiences of the story, but that understandings are also informed by prior knowledge, or "understandings of life."

Robinson (2025) has captured the co-constitutive nature of this relationship in their analysis of the history of discourses of affordances and constraints, and what such a history might mean for how we understand educational technologies. With a specific interest in digital platforms, Robinson compares three accounts of affordances: Gibson's (2015) exploration of affordance in terms of what it provides or furnishes in a specific environment; Norman's (1999) emphasis on possible physical, logical, and cultural constraints; and Kress's (2003) shift towards the agency of composers. Robinson concludes that "Platforms afford things for people, yes, but so too do people afford things to platforms" (2025, 96–97). Put another way, affordance points both ways. When David highlights how games have choices in them which produce different endings, he is drawing attention to how game design affords meanings. However, he is also clear in his emphasis on what students in the study brought with them, in terms of experiences and knowledge that shape what meanings will be made of and with the games. Hence, the blurring of reading/viewing and writing/playing boundaries, a characteristic of much current research on young people's digital reading practices (Beavis 2020; Burnett and Merchant 2020), is another example of the importance of conceptualizing digital reading as more than the study of objects or interfaces.

7 | Discussion

Earlier, I argued that a postdigital perspective offers a frame for exploring digital reading that escapes the digital determinism that removes such reading from its context. Bhatt's theorization of postdigital literacy ecologies serves as an important reminder of the importance of returning literacy practices to the contexts from which they are too often removed and focusing our attention on the parts of the assemblages. Such an approach allows educators to take seriously local configurations of digital reading practices and to situate such practices within contexts of literacy and English education. In the discussion that follows I locate the study's findings within three themes to emerge from postdigital theory, namely: (1) rupture and continuity, (2) analogue-digital entanglements, and (3) the rejection of digital grand narratives. The aim is to demonstrate how approaching human-tech relations from postdigital perspectives has real implications for how we conceive of a digital reading curriculum and pedagogy for schooling.

7.1 | Rupture and Continuity

Rather than accepting discourses of radical transformation or revolutionary change, postdigital perspectives challenge the notion that digital technologies represent a complete break from educational practices of the past, and, in relation to digital reading, instead emphasize characteristics of both rupture and continuity. Epistemologically, rupture is evident in terms of how texts come to be 'known' through digital reading, evident in the interplay between multimodality, multisensory embodiment, player as author, and distributed cognition. Not only is the author no longer the sole arbiter of meanings (Barthes 1977), but the boundaries of what constitutes the text, where it starts and finishes, and even how we determine when reading has started or ended have become blurred (Burnett and Merchant 2021).

Ontologically, what actually constitutes digital reading as a discrete phenomenon remains challenging. Rather than assuming a stable, unified reality divided into discrete categories (such as digital versus non-digital, human versus non-human, real versus virtual), the postdigital condition introduces significant ruptures that fundamentally alter what it means to exist and be in contemporary contexts. The reader is no longer a separate subject encountering an external object, but rather emerges through intra-actions with digital and non-digital systems, platforms, and other entities. From such a perspective, reading is revealed as never a purely human activity. As David's articulation of the multiple phenomena shaping his meaning-making during the digital game unit reveals, the distribution of reading agencies across human and non-human actors makes determining the boundaries of digital and analogue objects or practices impossible.

However, continuity remains a key feature of postdigital explanations of our engagement with digital technology. Despite the ruptures introduced by digital technologies, literacy practices historically important to English education persist across digital and non-digital school reading contexts. Reading at school still requires engaging in close reading, annotation, reflection, and meaning-making processes that have long histories in print-based literacy traditions. The act of pausing to contemplate meaning, questioning textual authority, and constructing personal interpretations continues across both digital and non-digital reading environments. The subject-English imperative to study texts, and not just play or appreciate them, reflects a continuity from the past, through the present, and into the future. The form that school digital reading takes cannot escape the structuring effect of the English classroom, whereby historically produced ways of analyzing text manifest in the present and then structure future possibilities.

David's distinctly digital life appears to confirm the existence of a generation of young people born and raised digitally (Nguyen 2021; Palfrey and Gasser 2016), and to signal a move away from the printed word, with consequences for school reading. However, the persistent structures of schooling, coupled with David's extensive engagement with analogue texts (he is still interested in reading printed works for pleasure outside of school and is an avid viewer of film), suggest a more complex picture of both rupture and continuity.

7.2 | Analogue and Digital Entanglements

At a time when there is great anxiety about digital disruption, the desire to want to identify which digital technologies and which digital literacy practices cause more harm than good is an understandable way for parents and educators to respond. However, too much of the extant research is built upon cartesian logics, dualisms, that buffer out complexity so as to produce neat and tidy assertions about complex relationships. As the work of many scholars of print and digital reading cultures has demonstrated (see Driscoll 2024; Murray 2018; Pianzola 2021), such relationships, whether framed in terms of assemblages (Fawns 2019), entanglements (Barad 2007), or ecologies (Bhatt 2023), involve print and digital reading cultures as co-constitutive.

Let us consider the relationship between David's in-school and out-of-school digital and non-digital reading practices. Outside of school, David reads books, plays digital games, and watches films, and he spoke of enjoying the storytelling associated with all three. Inside of school, David also reads books, plays digital games, and watches films, albeit for purposes different from those at home. If we are to subscribe to the neat boundaries laid out by critics of digital culture (see Haidt 2024; Wolf 2018), David's at-home novel reading is clearly delineated from his other multimodal/digital reading and offers positive benefits to his in-school reading. Yet, the account David offers is far more entangled. At the very least, given success in the *Reading Digital Games* course required the play and close reading of key scenes from the games studied, it is not inconceivable that his extensive history as a gamer positively impacted his critical reading practices in the classroom. Ehret and Rowsell (2021) remind literacy educators and researchers to consider the uncontrollable and indeterminate as "processes of meaning making through language, as well as with and around texts" (p. 205). Their argument leaves us in the uncomfortable position of not knowing where the effects of David's digital and non-digital reading start or finish, nor are we able to determine precisely the extent to which at-home digital/non-digital reading shapes in-school digital/non-digital reading, or vice versa.

The value of thinking digital reading in terms of assemblages, entanglements, and ecologies is to see technologies and practices as parts of more complex wholes. This acknowledgment requires resting with the uncomfortableness that comes with a messier view of socio-technical relations (Fawns et al. 2023, 81). When considered in the context of neoliberal approaches to literacy education that seek to compartmentalize every practice into measurable units and to maximize instructional strategies to increase student performance on standardized tests, the indeterminacy that accompanies digital/analogue reading boundaries will be confronting for many educators.

7.3 | Rejecting Digital Grand Narratives

The denial of (digital) matter's dynamism has enormous implications for what comes to matter in school education. Take the example of digital games. If we are to believe the claims that digital games, in and of themselves, and outside of specific contexts, cause harm, then their play and study in literary and literacy education will be challenged. And rather than an education

that is culturally responsive and creates space for young people to study the texts that are central to their lives, in aesthetic and critical ways, we are likely to be left with a curriculum that mythologises a golden age of print-centric reading of canonical works. Williamson et al.'s (2024) critique of the contextlessness that so often accompanies "glossy imaginaries and optimistic promises" (p. 335) of educational technologies is just as applicable to the contextlessness too often associated with claims about the harms of digital culture. Accounting for matter's dynamism requires accounting for the materialization of all bodies, human and non-human (Barad 2007).

Two conclusions from Barad's foundational work on posthumanist performativity are essential to keep in mind as scholars and educators continue to understand this phenomenon that I have referred to throughout this paper as digital reading. First, Barad calls into question the localization of agency within individuals. Those offering deterministic accounts of digital reading suggest users (with agency) use technologies (without agency), and that the consequences of such use are largely negative (i.e., Haidt's claim that young people derive absolutely no benefit through their use of mobile phones). In contrast, Barad's posthumanist stance leads to a position that users and technologies co-constitute each other through their intra-actions. A digital game's design, algorithms, and functionalities shape the player's behavior, while the user's interactions simultaneously shape the technology's development and functionality. Digital reading emerges from the entanglement of human and technological processes.

Second, Barad argues that entanglements are not "isolated binary coproductions" (2007, p. x), but rather highly specific configurations. Entanglements are not generic or universal but are shaped by particular contexts, histories, and material conditions. For Barad, these configurations are specific to particular moments in time and space. While this paper has focused on those factors associated with David's digital reading inside and outside of the *Reading Digital Games* course, a focus on another student in the study from which David was a part would highlight different configurations. Despite the many claims that assert young people as some kind of homogenous group of digital natives, universally raised by digital technology and enamored with digital games (Prensky 2003), I am constantly amazed at how many students in the various studies I have conducted on reading digital games are either apathetic to such teaching or opposed to it. Barad's work serves as a reminder to acknowledge that engagements with technology are constantly evolving and reconfiguring. The universalizing statements by tech boosters and tech-alarmists fail on an ontological level, through flattening out differences and specificities, and on an epistemological level, due to the claims they seek to make about the knowledge production consequences of digital reading.

8 | Conclusion

This paper responds to Coiro's (2021) call to conceptualize digital reading beyond a sole interest in the medium, and instead focuses on one specific configuration of digital reading, the digital game-centered English classroom. Through the application of ideas from postdigital theory, namely Bhatt's (2023) notion of postdigital literacy ecologies, what has been demonstrated is the highly contingent nature of digitally mediated meaning-making and the problematic task of distinguishing between analogue and digital forms of comprehension. While research on digital and non-digital game literacies has been moving in this direction for some time (see Apperley et al. 2016; Bacalja et al. 2024a, 2024b; Garcia 2020), and we continue to see the growth of postdigital theory as a productive force for rethinking English and literacy education (Bacalja 2026; Colvert et al. 2024; McLean Davies et al. 2020), the use of concepts from the postdigital turn as a means for exploring local configurations of digital reading remains novel.

As scholars, policy makers, and those connected to broader school communities respond to the undisputable problematic nature of many aspects of digital culture, the postdigital offers one way to temper simple solutions. Both forms of technological determinism, the boosters and the alarmists, reduce complex, multifaceted reading practices to simplistic cause-and-effect relationships between technology and cognition. Through their agential cuts (Barad 2007) they disentangle phenomena that are actually mutually constitutive and inseparable, obscuring the intricate entanglements that characterize digital reading.

While the focus of this paper has been on digital reading, a postdigital literacy ecologies approach might also provide a useful frame for how we understand and respond to the challenges posed by the rise of large language models and generative AI technologies to digital writing. Much like earlier waves of technological innovation, GenAI has been met with both utopian promises of educational transformation and dystopian warnings of cognitive decline and academic dishonesty. However, the postdigital framework developed throughout this paper suggests that such deterministic framings are fundamentally inadequate. GenAI systems are not autonomous agents with inherent capacities to improve or harm learning; rather, they are deeply entangled within complex socio-technical assemblages shaped by institutional contexts, pedagogical choices, material conditions, and the contingent practices of users.

Understanding how students engage with GenAI for reading and writing tasks requires attending to the specific configurations of these entanglements, including: the policies governing their use, the affordances and constraints of particular platforms, the prior experiences and dispositions students bring, and the broader political economies of data and algorithmic systems. Encouraging educators to examine how these technologies are already embedded within the messy realities of schooling will be just one step in adopting a critical non-deterministic position to the latest, but certainly not the last, digitally mediated disruption to schooling.

Whether we refer to this time as the digital, postdigital, or informational age, there should be little doubt that school classrooms will continue to be places where the latest digital technologies are the focus of teacher and student attention. The challenge for literacy educators, then, is not to resist or uncritically embrace these technologies, but rather to develop pedagogical approaches that approach all forms of reading as a contingent practice. By recognizing that digital reading cannot be disentangled from the broader socio-material contexts in which it occurs,

educators can move beyond simplistic interventions and instead create classroom opportunities that seek to cultivate critical, creative, and aesthetic dispositions towards digital reading.

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Consent

Consent forms that were signed prior to the study commencing.

Conflicts of Interest

The author declares no conflicts of interest.

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The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Endnotes

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