

Article

Digital Shakespeare Is Neither Good Nor Bad, But Teaching Makes It So

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Abstract: Digital Shakespeare is all around us: mobile apps, YouTube videos, online “participatory cultures,” electronic playtexts, web-based educational materials, even Shakespeare-themed videogames. But how do these resources intersect with the teaching of Shakespeare in the university classroom? In particular, how might digital technologies aid or impede the effective teaching of close reading and critical interpretation in relation to Shakespeare? Rather than discussing the various creative and interactive platforms and media available to the Shakespeare instructor, this essay focuses on recent studies exploring the consequences of using e-readers and other digital devices on individual brains in order to present (1) the demonstrably negative impact of “multitasking” on student learning, (2) the potentially damaging effects of using e-readers and e-texts in the Shakespeare classroom, and (3) suggestions regarding the best practices for teaching students to engage with complex texts like the works of Shakespeare.

Keywords: Shakespeare; digital humanities; e-books; multitasking; pedagogy; close reading; critical thinking

1. Introduction

Students today are chronically distracted by technology. Studies have demonstrated that this obsession leads to numerous cognitive deficiencies: many of our students cannot focus on extended tasks, they cannot retain important information, they cannot filter out irrelevancy, they cannot appropriately process emotion, and so forth. Those engaging with electronic texts read in the shape of an F and store the information they do encounter in a part of the brain that is not designed for long-term memory. Even knowing this, students will not abandon their phones. Worse, professors are under constant pressure to include elements of the “digital humanities” in their classrooms (often with little understanding of what that means),¹ even when brain scans and pedagogical studies have shown that many digital interactions actually impede learning. Apps such as Offtime, Freedom, and Flipd can aid students during study time by turning off social media and other distractions and professors can provide tech-free zones of learning inside the classroom but digital Shakespeare is more available than ever before. How can professors balance the developmental dangers of technology with the potential advantages of the digital world? Research is just emerging on this topic but this essay represents an early exploration into how best to teach the close reading and critical analysis of Shakespearean literature in a digitally saturated environment given recent research and discoveries

¹ Gina Biancarosa and Gina Griffiths note that the evidence regarding the effective training and support of e-reading technology use is “in short supply. Teachers most commonly report that what prepared them to make effective use of technology for instruction was not training but independent learning” (Biancarosa and Griffiths 2012, p. 150). For similar investigations, see Lucinda Gray, Nina Thomas, and Laurie Lewis’ U.S. Department of Education report *Teachers’ Use of Educational Technology in U.S. Public Schools* (Gray et al. 2010) and Larry Cuban, Heather Kirkpatrick, and Craig Peck’s “High Access and Low Use of Technology in High School Classrooms” (Cuban et al. 2001).

involving digital technology and the brain. Specifically focusing on pedagogy and literature-related reading technologies, this essay will try to offer an initial evaluation of the best practices for using the digital humanities to foster critical reading and thinking skills in the Shakespeare classroom.

Of course, “digital Shakespeare” encompasses much more than this essay has space to address but the various iterations of the digital Shakespeare rhizome have been amply explored elsewhere.² Teachers implementing digital Shakespeare in the classroom have already taken advantage of informal learning cultures—what James Paul Gee calls “affinity spaces” (Gee 2004, 2018) and Henry Jenkins refers to as “participatory cultures” (Jenkins et al. 2006, p. 3)—in which the students themselves become the “media creators,” described by Jenkins as someone who has “created a blog or webpage, posted original artwork, photography, stories or videos online or remixed online content into their own new creations” (Jenkins et al. 2006, p. 6). Stephen O’Neill calls such creative expressions within the genre of Shakespeare-related work “do-it-yourself Shakespeare” (O’Neill 2014, p. 2) and examples may be found dating back to the very beginning of the public World Wide Web. In 1997, for example, students from Glen Ridge High School posted *Star Wars: Macbeth* (relaunched in 2006 at <http://www.dcf.net/macbeth/mainpage.html>), which combined lines from *Macbeth* with plot points, visual quotes, special effects, and integrated images from the *Star Wars* film. Courtney Lehmann observes that the Scotland depicted in this student video is “a once and future place” where “kids with cameras are capable of digitally remastering history” (Lehmann 2003, p. 244); we might add that *Star Wars: Macbeth* also represents one of the earliest instances in which kids with cameras have digitally remastered Shakespeare. Today, there are a multitude of new media and platforms for reimagined Shakespeares but Christy Desmet suggests that, “Probably the paradigmatic new media platform for Shakespearean creators and consumers is YouTube” (Desmet 2017). As a space for adaptation, the video-sharing website invites unique reinterpretations of the Bard because YouTube Shakespeare—what Jennifer Holl identifies as “YouShakespeare”—provides an environment in which fans “wield Shakespeare as an incomplete narrative that invites perpetual revision” (Holl 2017, p. 214).

But while such digital cultures may exemplify Jenkins’ “experimental,” “innovative,” and “highly generative environments” (Jenkins et al. 2006, p. 9), they simultaneously move the consumer/creators farther away from Shakespeare’s text. Similarly, when such projects are migrated to the classroom, they often reveal more about the attitudes and interests of the students than they do about Shakespeare and his culture. Alan Liu, for instance, has devised a series of courses that he calls “Literature+,” combining the close reading of print texts with a later engagement with other media forms (Liu 2008). But while projects such as those in Literature+ courses—based on the examples provided by Liu—may provide students with opportunities to use new media technologies in order to craft original creations, entertaining adaptations, and interesting digital visualizations of literary works, they seem to provide minimal engagement with the text itself and no opportunities for university-level analysis. Undoubtedly, the media affordances and individualized engagement that such digital assignments supply make them worthwhile endeavors in certain contexts, especially when they help to accommodate different educational backgrounds, different learning styles, and different academic goals but while these Literature+ projects capitalize on technologies and mediascapes that many students already know, they do not always clarify the early modern plays and poems that students do not yet know. In my experience, digital Shakespeares work best when the students have a very firm understanding of the intricacies of the text—and that often requires pre-digital close reading and analysis.

Rather than focus on the kinds of interactive digital projects advocated by Jenkins, Gee, Liu, and others, this essay considers how reading Shakespeare electronically affects the sophisticated comprehension, abstract thinking, and analytical interpretation that should precede them. In particular,

² For a good summary of the history of the digital humanities in connection to Shakespeare, please see John Lavagnino’s “Shakespeare in the Digital Humanities” (Lavagnino 2014); as an incomplete introduction to recent studies in the field, see also (Ailles 2014; Bloom 2015; Desmet 2017; Holl 2017; O’Dair 2014; O’Neill 2014, 2015; Rowe 2014; Santamaria and Moncrief 2016).

I want to examine the impact of “multitasking” devices (mostly smartphones) on students’ brains, the effects of using e-readers or similar technology on students’ critical reading, and the best practices for engaging with complex texts like Shakespeare. Undergirding this exploration is Katherine Hayles’ concept of “technogenesis, the idea that humans and technics have coevolved together,” and “the proposition that we think through, with and alongside media” (Hayles 2012, pp. 1, 10). In the Shakespeare classroom, for example, many instructors have now adopted electronic editions of the plays and poems without any recognition of the differences between digital and print reading. Eventually, the two learning experiences may be equivalent but I would like to caution against the wholesale use of electronic texts in academic settings, especially when dealing with difficult theoretical material. As Hayles warns, “Contemporary technogenesis, like evolution in general, is not about progress. That is, it offers no guarantees that the dynamic transformations taking place between humans and technics are moving in a positive direction” (Hayles 2012, p. 81). Certainly, there are circumstances where e-readers and similar technology may be warranted, but instructors should be as thoughtful in their choice of media as they are in their choice of texts.

Katherine Rowe points out that when dealing with “incunables—emergent technologies in a phase of rapid media change”—many humanists worry about the tradeoffs between “good” and “good-enough” texts, yet “The question we should be asking ourselves is at once a narrower and more generative one. When it comes to discriminating between the texts we choose, craft and promote for larger audiences, we should be asking ourselves: *good enough according to what principles and for what purposes?*” (Rowe 2014, p. 144). E-readers are excellent resources when the guiding purposes and principles include pleasure reading, convenience, and cost. For academic rigor, intellectual development, and deep thinking, however, there are concerns that should be addressed first. All the same, the suggestions I present here are not meant to be prescriptive or dogmatic but rather starting points for those who wish to develop digital resources with the kind of mindful “Design for learning” advocated by Helen Beetham and Rhona Sharpe (Beetham and Sharpe 2013, p. 8). My own design privileges particular close reading and critical thinking practices but the information furnished here is meant to empower instructors to develop their own designs for digital Shakespeares.

2. The Dumbest (and Most Distracted) Generations?

It has been more than a decade since Mark Bauerlein published his infamous book on Millennial students (Generation Y), in which he examined “the best and the broadest research” available in order to evaluate “the intellectual condition of young Americans”; the “consistent and perilous momentum downward” that Bauerlein discovered led him to dub this population “the Dumbest Generation” (Bauerlein 2008, p. 7).³ Unfortunately, the current generation of students—iGen or Generation Z—appears to be no better than Millennials at the important intellectual tasks necessary to read, understand, and analyze Shakespearean texts. For Bauerlein and many other critics, the deficiencies of Generations Y and Z stem from the fact that today’s students are habitually distracted. 78% of teens check their phones at least once an hour and at least half of them feel that they are addicted to their mobile devices (Felt and Robb 2016, p. 2). In 2015, Common Sense Media found that teenagers in the United States spend at least nine hours per day using media for their enjoyment (this does not include schoolwork or other academically related activities). Commenting on this “mind-boggling” statistic, James Steyer, the founder and CEO of the nonprofit, notes, “It just shows you that these kids live in this massive 24/7 digital media technology world and it’s shaping every aspect of their life. They spend far more time with media technology than any other thing in their life. This is the dominant intermediary in their life”

³ It is important to note here that Bauerlein does not consider Millennials to be lacking in innate intelligence or potential; as he explained to some of my classes that he so generously agreed to Skype with, Bauerlein finds today’s students lacking in preparation (especially in history, civics, and literature), uninterested in “adult” matters, and continually distracted by social media.

(Wallace 2015). Such an immersion in media technology would not be such a bad thing if it were not accompanied by dramatic social and cognitive impairments, some of which we will discuss below.

When asked about the tremendous amount of time spent on their digital devices, most students respond by explaining how such technology allows them to multitask more effectively. Yet, while it is true that perhaps 2.5% of the population (the “supertaskers”) can perform two or even three tasks at once, most humans simply do not have brains designed for multitasking (Watson and Strayer 2010). When normal people attempt to complete more than one task at a time, they execute *both* tasks poorly. More disturbingly, repeated multitasking rewires the brain, resulting in a host of problems. As Clifford Nass observes,

The research is almost unanimous, which is very rare in social science and it says that people who chronically multitask show an enormous range of deficits. They’re basically terrible at all sorts of cognitive tasks, including multitasking. [. . .] People who multitask all the time can’t filter out irrelevancy. They can’t manage a working memory. They’re chronically distracted. They initiate much larger parts of their brain that are irrelevant to the task at hand. And even—they’re even terrible at multitasking. When we ask them to multitask, they’re actually worse at it. So they’re pretty much mental wrecks. (Nass 2013)

Obviously, such deficiencies affect the individual student attempting to grapple with Shakespeare’s already difficult text but what may not be clear is how multitasking can also damage the literature classroom as a whole. We have known for more than a decade, for example, that heavy media multitaskers have a much more difficult time filtering out irrelevant information (Ophir et al. 2009). For those students reading a Shakespearean play or poem, the inability to identify pertinent characters and information will cripple their understanding. As important as it may be to understand what a “changeling” is in *A Midsummer Night’s Dream*, the student who does not recognize that the changeling boy is at the center of the disagreement between Titania and Oberon (or even that there is a disagreement) will fundamentally misunderstand an essential element of the plot. Some instructors of Shakespeare’s work struggle to make the text more intelligible to students of differing abilities, levels, and learning styles and most are familiar with social media’s detrimental effect on student comprehension and attention but many professors have given up the fight to reduce social media distractions in class. They allow phones and other personal technology into the classroom,⁴ fully understanding that some students will abuse the privilege but mistakenly believing that only that student’s learning experience will be diminished. In fact, one single student watching cat videos in a classroom can have a remarkably harmful impact on the students around her.

In their 2013 study on the effects of multitasking, for example, Faria Sana, Tina Weston and Nicholas J. Cepeda found that student “comprehension was impaired” when they tried to pay attention to a lecture and take notes while engaged in “the secondary task of completing unrelated online tasks,” such as watching videos or interacting with others on social media; this finding was not particularly surprising, as it matches earlier studies in the field,⁵ but Sana, Weston and Cepeda also made the startling discovery that those students *behind* the multitaskers suffered dramatic impairment to their comprehension as well: “Those in view of a multitasking peer scored 17% lower on a post-lecture comprehension test” (Sana et al. 2013, p. 29). When confronted with this study, students have confessed to me that they have been noticeably distracted by their web-surfing peers even when that person is viewing something that holds no interest to them personally. For this reason, I ask all my students to turn their phones completely off and to put them away before class begins. At first, some students suffer from what I call “empty pocket syndrome”—a made-up designation for the malady that makes

⁴ Some teachers have attempted to co-opt mobile apps, social media, and videogames as learning resources in the service of the Shakespearean classroom; see Jennifer Ailles’ “Is there an app for that?” (Ailles 2014), Stephen O’Neill’s “Shakespeare and Social Media” (O’Neill 2015) and Gina Bloom’s “Videogame Shakespeare” (Bloom 2015).

⁵ See, for example, (Barak et al. 2006; Hembrooke and Gay 2003; Kraushaar and Novak 2010; Wood et al. 2012).

them think their phones are vibrating even though they have put them away (this tactile hallucination is similar to the also non-medical but very real “phantom vibration syndrome” experienced by 89% of undergraduates (Drouin et al. 2012)). Most students report dramatically increased focus after a week or two and some choose to leave their devices at home after I mention to them that smartphones have been found to reduce a person’s working memory and weaken her problem-solving skills even when turned off and out of sight in a bag or purse (Ward et al. 2017). Of course, in all the time I have spent pointing out the dangers of multitasking, no student has ever abandoned her smartphone completely.

Smartphones are here to stay and exhorting students to get rid of their phones outside of the classroom is both quixotic and counterproductive. As teachers, however, we should encourage students to unplug when reading and studying. And we should also admit to our own difficulties with focus and concentration, because multitasking has become so ubiquitous that almost no one is immune. Even Nicholas Carr, who has famously asked if Google is making us “stupid,” recounts the way his encounters with the internet have been “chipping away [his] capacity for concentration and contemplation” so that his ability to think deeply and effectively has been severely compromised: “My mind now expects to take in information the way the Net distributes it: in a swiftly moving stream of particles. Once I was a scuba diver in the sea of words. Now I zip along the surface like a guy on a Jet Ski” (Carr 2008).⁶ So my suggestion is for instructors to have students turn off their phones in class and to ask them to put them away while studying. I expect most professors already do this. My next suggestion, however, will be a bit more controversial: also have them turn off their computers for the entire class (unless needed for specific accommodations, in which case ask those students to sit where no other student can see their screen) and do not let anyone in the class use e-books. Instead, I require the students to use print texts of the same edition, so everyone will be on the same page, both literally and figuratively.

3. Reading Digital Texts

In 2006, Jakob Nielsen and the Nielsen Norman Group first announced the oft-repeated discovery that people read in the shape of an F when they read electronically (Nielsen 2006); the study was revisited in 2017 by Kara Pernice, also of NN/g, with similar results (Pernice 2017). Nielsen found and Pernice confirmed, that individuals reading online navigate the page using an F-shaped scanning pattern, characterized by numerous fixations that are concentrated along the top and the left-hand side of the page. Specifically, users first read across the top in a horizontal movement, then they move down a bit and read across in a second shorter horizontal movement, and then finally they scan the left side in a long vertical movement. As Pernice observes, “This scanning pattern *resembles* the shape of the letter F but it is rarely a *perfect* F. For example, in some cases, people may become interested in a paragraph down the page and may fixate on more words, reading toward the right again, so the pattern comes to resemble an E” (Pernice 2017). Regardless of the exact scanning pattern, however, this reading practice means that most people skim online texts in such a way as to miss significant portions of the information provided. Nielsen says that “79 percent of our test users always scanned any new page they came across; only 16 percent read word-by-word”; given the amount of time that

⁶ For more on Google’s damaging effects on brain function, please see Gary Small and Gigi Vorgan’s *iBrain* (Small and Vorgan 2008), Betsy Sparrow, Jenny Liu, and Daniel Wegner’s “Google Effects on Memory” (Sparrow et al. 2011) and Adam Gazzaley and Larry Rosen’s *The Distracted Mind* (Gazzaley and Rosen 2016). In “Cluster Failure: Why fMRI Inferences for Spatial Extent have Inflated False-Positive Rates,” Anders Eklund, Thomas Nichols and Hans Knutsson critique the use of fMRI (functional magnetic resonance imaging) data in studies such as these, claiming that flawed statistical methods in fMRI data evaluation invalidates the results (Eklund et al. 2016, [with their correction later that year in PNAS 113, no. 33 (August): E4929, removing some of the broader claims and high numbers of potential impact]). In turn, the accuracy of Eklund, Nichols, and Knutsson’s work has been challenged by Emery Brown and Marlene Behrmann’s “Controversy in Statistical Analysis of Functional Magnetic Resonance Imaging Data” (Brown and Behrmann 2017) and Daniel Kessler, Mike Angstadt, and Chandra Sripada’s “Reevaluating ‘Cluster Failure’ in fMRI using Nonparametric Control of the False Discovery Rate” (Kessler et al. 2017). Laura Sanders discusses the concerns of Eklund, Nichols, and Knutsson in “Trawling the Brain,” (Sanders 2009) and Katherine Hayles’ *How We Think* provides broader criticisms of the assumptions and methodologies associated with fMRI brain studies (Hayles 2012, pp. 67–68).

readers spend on average per webpage, Nielsen believes most readers only read 20–28 percent of the words (Baron 2015, p. 42).

Perhaps just as disturbing as missing seventy-two to eighty percent of the information on any given page, is the strong tendency for electronic readers to forget the little that they have read. Reading electronically short-circuits the brain and bypasses the normal neural pathways that are designed for deep reading and retention (Wolf 2008).⁷ Worse, “cognitive offloading,” or the practice of using the internet as a memory aid, increases after each use and significantly damages a person’s natural working memory. In a recent study of the phenomenon, researchers found that participants who had previously used Google to gain information were significantly more likely to use the internet again—and to do so much more quickly—rather than rely on their own memory; strikingly, 30% of the participants did not attempt to answer even a single simple question from memory (Storm et al. 2017).

F-shaped electronic reading and cognitive offloading result in very poor reading comprehension. In the Shakespearean text, reading less than a third of the text and failing to remember what one has read will make the play or poem utterly impenetrable. For that reason, I ban e-books and computer copies from my classroom.⁸ I understand the economic advantages of electronic textbooks and I am sympathetic to the financially challenged (I was a very financially challenged student myself) but in this instance I insist on print editions. Similarly, when I provide PDFs of readings, I expect my students to print them out and mark them up. Undoubtedly, some readers will characterize my opinions on this matter as those of some old-fashioned, technophobic Luddite but I am not opposed to positive technological advances—and neither, in fact, were the original Luddites. Supposedly named after the (almost certainly fictional) apprentice Ned Ludd, who allegedly smashed two stocking frames in 1779, the Luddites did not oppose all technology but rather those machines that threatened their livelihood. A Luddite might more properly be defined then as someone who throws a literal or metaphorical monkey-wrench into the machine that is damaging society.

Likewise, I am not opposed to digital resources. I have used a learning management system almost every class day for nearly fifteen years and I created my own course websites for the seven years before that. I regularly test-drive new digital resources and I was one of the very first teachers in the U.S. (if not the very first) to use iPads as e-readers. So, my resistance to e-readers is based on experience and not the result of some uninformed bias. When the first iPads were released in 2010, I performed an experiment with two sections of my Critical Reading and Interpretation courses (designed as general education literature courses) through an arrangement between my university and Apple. I provided iPads and digital books to one class and physical copies of the same texts to the other class. Throughout the semester, I witnessed a shocking divide emerge between the two groups in terms of their critical reading skills and overall analytical competence. I was surprised to find that the group with the e-readers (who began the semester performing slightly better than the traditional-text class) ended the year with far weaker close reading skills and much lower test and paper grades (more than 15 points lower on average). Of course, these results are merely anecdotal but early studies in electronic reading show similar results: while surface-level understanding does not decline appreciably when reading texts electronically, deep critical reading suffers a steep decline when electronic texts are used. Gina

⁷ The assertion that the brain may be hardwired with specific neural pathways for language is supported by both neuroscience and linguistics; for more, see Augusto Buchweitz’s “Language and Reading Development in the Brain Today” (Buchweitz 2016), Mark Baker’s *The Atoms of Language* (Baker 2001) and Kimihiro Nakamura, Wen-Jui Kuo, Felipe Pegado, Laurent Cohen, Ovid J. L. Tzeng, and Stanislas Dehaene’s “Universal Brain Systems for Recognizing Word Shapes and Handwriting Gestures During Reading” (Nakamura et al. 2012).

⁸ Naomi Baron notes that “it has become common to let actual eBooks dominate the conversation about reading on digital screens. Of course, there is more involved: Facebook updates, movie reviews, blogs, scholarly articles” (Baron 2015, p. 6). Because this essay deals with reading as it relates to the classroom, I will not discuss the kinds of reading practices connected to leisure and social media activities. Students may be reading and writing more than ever before on platforms such as Twitter but I am interested in teaching deep reading and critical thinking and Twitter promotes the opposite of both. I do admit, however, that I have conflated at times the effects of reading on a computer with reading on an e-book. As research progresses, these two reading experiences should be separated but for now the transference of reading skills and strategies from online to e-book appear to be similar enough for us to talk about them together.

Biancarosa and Gina Griffiths note that “e-reading technology offers many tools for mitigating both old and new literacy challenges. But e-reading technology tools are just that—tools. To be effective, they must be wielded with care and precision;” unfortunately, the studies undertaken thus far “provide no evidence that large-scale implementation of e-reading technology improves educational outcomes” (Biancarosa and Griffiths 2012, pp. 154, 148). In contrast to the useful application of “hard” digital humanities in literature (involving coding, archiving, or other complex applications) the bookless classroom appears to be less pedagogically useful.

Of course, there are any number of critics—like Sigal Eden and Yoram Eshet-Alkalai—who claim that “there is almost no performance difference between these two formats” (Eden and Eshet-Alkalai 2013, p. 853). Or Jackie Young, who argues that reader comprehension and retention “is exactly the same in print and digital media” (Young 2014, pp. 383–84). Or Sara Margolin, Casey Driscoll, Michael Toland, and Jennifer Little Kegler, who suggest that “The present research has demonstrated that electronic forms of text presentation (both computer and e-reader) may be just as viable a format as paper presentation for both narrative and expository texts” (Margolin et al. 2013, p. 517). Or even David Daniel and William Douglas Woody, who note that when tested after a specific reading, “students performed similarly on the quiz,” although the digital readers “took longer to do so” (Daniel and Woody 2013, p. 22).⁹ Of course, one of the problems with studies such as these is the definition of terms. What, for instance, do we mean by *performance* or *comprehension* or *retention* or even *learning*? Each of the above studies claim that the students learn just as well when using a digital reader as they do when reading on paper. But as Naomi Baron observes, “The problem, however, with learning-measurement studies is that their notion of ‘learning’ has tended to be simplistic. Reading passages and answering questions afterwards may be a familiar tool in standardized testing but tells us little about any deeper level of understanding” (Baron 2018). If we want to teach our students to repeat facts or parrot information, then digital texts seem to be just as good as print books. In fact, digital platforms may be *better* at teaching students to regurgitate information. Geoff Kaufman and Mary Flanagan have found, for example, that readers answered more correct “concrete” questions when reading from a digital source but scored eighteen percent lower on questions that required logical inference, suggesting that reading on digital platforms might make a person “more inclined to focus on concrete details rather than interpreting information more abstractly” (Kaufman and Flanagan 2016). In my classroom, I want students to be good thinkers, not merely good summarizers.

For our students to succeed beyond the Shakespeare classroom—in other university courses but also when they seek employment outside academia—they need to develop complex problem-solving, deep critical thinking, and effective communication skills.¹⁰ Digital reading may help students recall certain specifics from a text but even recounting these simple details can be a challenge if the students are forced to think about them conceptually rather than concretely. For example, Anne Mangen has determined that, compared to readers of print books, “Kindle readers performed significantly worse on the plot reconstruction measure, that is, when they were asked to place 14 events in the correct order” (Flood 2014). Similarly, digital readers in my experimental iPad readers course could generally repeat back terms and definitions from the reading but they often could not explain them. Similarly, I found that if I asked for these terms on an exam but slightly reworded the definition, the digital readers no longer recognized the information that they otherwise “knew”.

⁹ In contrast to these studies, Anne Mangen, Bente Walgermo, and Kolbjørn Brønnick also examined the differences in reading comprehension when reading in print versus digitally (Mangen et al. 2013) and found that “students who read texts in print scored significantly better on the reading comprehension test than students who read the texts digitally” (Flood 2014).

¹⁰ This is based on a 2013 survey conducted by Hart Research Associates for the Association of American Colleges and Universities in which 93% of employers stated that “a candidate’s demonstrated capacity to think critically, communicate clearly, and solve complex programs is more important than his or her undergraduate field of study” (Hart Research Associates 2013, p. 4). A 2009 study conducted by the Global Strategy Group for the architecture and consulting studio Woods Bagot returned similar results, with employers listing as their four most desired attributes problem-solving skills, the ability to work as a team, critical thinking, and written communication skills (Holmes 2009, p. 7).

In many ways, the experience of e-book readers parallels that of online readers, with both sets struggling to move beyond surface-level understanding. Students in small study conducted by Maureen Walsh, Jennifer Asha, and Nicole Spranger, for example, were “highly motivated to work with digital texts and they were able to use basic ICT [Information and Communication Technologies] skills to navigate sites. However, their reading responses and understanding seemed to be at a literal, often superficial, level with little evidence of inferring, evaluating or critical reading” (Walsh et al. 2007, p. 51). For me, the deterioration of critical reading and thinking skills is the most disturbing side-effect of digital reading. Carr blames the omnipresent noise of the internet for the death of deep thought, suggesting that online readers suffer from a kind of information overload that damages their intellectual processes: “The Net’s cacophony of stimuli short-circuits both conscious and unconscious thought, preventing our minds from thinking either deeply or creatively. Our brains turn into simple signal-processing units, quickly shepherding information into consciousness and then back out again” (Carr 2010, p. 119). But even comparatively “quiet” digital texts such as e-books appear to produce analogous results. This has led many experts on digital reading, such as Maryanne Wolf, to worry that we may become “mere decoders of information [. . .] whose false sense of knowing distracts from a deeper development of [. . .] intellectual potential” (Wolf 2008, p. 226). Decoders of information may read a Shakespearean play or poem and be able to recite facts, but they will not be able to fully engage with the complexity of the text.

And despite the claims of those critics above that the reading experiences of print and digital media are equal, even the earliest research into e-readers has demonstrated the inferiority of digital reading in the context of more-than-superficial thought. The first really serious initiative that was designed to examine the feasibility of using e-readers (like the Nook or the Kindle) in college classrooms occurred in the Fall of 2009 as part of a cooperative relationship between Amazon and seven American colleges and universities (Princeton University, Reed College, the University of Virginia, Arizona State University, Case Western Reserve, Pace University, and the University of Washington). The pilot program was marketed as a sustainability study aimed at schools interested in reducing paper printing costs but the three universities that published responses to the program—involving graduate courses at Princeton University, graduate courses at the Darden School of Business at the University of Virginia and various undergraduate courses at Reed College—all came to the conclusion that “the Kindle DX, by itself, is unsuitable for the rigors and expectations for college-level teaching and learning”; specifically, the students reported that the format of the e-reading experience “made their retention worse than usual,” while the “Researchers cited issues with text formatting (PDFs), highlighting and annotating, as well as text skimming and previewing as issues and reasons why these devices could not meet academic demands” (Schugar et al. 2011, pp. 177–78). More recent e-readers have corrected some of the formatting issues and have developed better annotation protocols but I suspect these improvements have had little impact on the reading experience because students report becoming less active readers when using an e-reader, with researchers observing a remarkable decline in the frequency of such students taking notes and marking up the text (Schugar et al. 2011, p. 182, Table 4). As more passive readers, students using digital texts become surface-readers, losing the techniques and habits of mind that promote deeper and more analytical interactions with the text.

Yet digital reading may not only sacrifice depth; it may also sacrifice breadth. For the student raised on Twitter, reading longer texts can be a challenge without adequate practice but many teachers have acquiesced to the shorter attention spans and weaker reading skills of their students. As representative examples, the public high school in Texas that my nephew attended never assigned any reading longer than the average webpage and my former university in North Carolina did not require non-English majors to read any literature longer than a magazine article. The studies mentioned above that praise digital reading do not account for the added intellectual load that longer texts might impose, as each one utilized relatively short reading texts. Participants in Eden and Eshet-Alkalai’s study looked at texts of approximately 600 words and focused on editing rather than deep comprehension; the readers in Young’s investigation were tested on short pieces from magazines and newspapers;

the subjects in the research done by Margolin et al. read only texts that were under 600 words; and the students of Daniel and Woody were simply info-mining a chapter in preparation for the quiz. Clearly then, the “comprehension” measured in each of these studies is superficial rather than deep comprehension. What happens when digital readers encounter a much more complex text, such as one by Shakespeare?

4. Reading Complex Texts

Unlike 600-word readings or short magazine articles, which may be consumed in one brief sitting, complex texts require an extended consolidation of effort. As Bauerlein insists, whenever they encounter truly complex texts, “readers may need to sit down with them for several hours of concentration. Readers need to be patient enough to ponder a single sentence for a few minutes, because many complex texts aren’t just purveyors of information but expressions of value and perspective” (Bauerlein 2011, p. 30). Students who are used to reading online, however, find such intense reading particularly difficult, even after they turn off the internet and attempt to spend time with only one complex text. Carr believes that this is because we have trained our brains to anticipate interruptions through our digital and social media habits; the price for being constantly in touch, he suggests, is being perpetually out of focus:

What psychologists and brain scientists tell us about interruptions is that they have a fairly profound effect on the way we think. It becomes much harder to sustain attention, to think about one thing for a long period of time and to think deeply when new stimuli are pouring at you all day long. I argue that the price we pay for being constantly inundated with information is a loss of our ability to be contemplative and to engage in the kind of deep thinking that requires you to concentrate on one thing. (Gregoire 2015)

Complex texts, such as those by Shakespeare, need different reading strategies than the more simplistic, information-driven texts that most students are accustomed to encountering. For that reason, I always begin my Shakespeare courses with a close reading exercise designed to help them acclimate to the demands of college-level reading and thinking.

Jonathan Culler has illustrated the vagueness of the term “close reading,” suggesting that the concept is more often a “slogan” than a “particular definable practice” (Culler 2010, p. 20). He quotes Peter Middleton’s assertion that close reading is “our contemporary term for a heterogeneous and largely unorganized set of practices and assumptions” (Middleton 2005, p. 5) and argues that “It may become especially important to reflect on the varieties of close reading and even to propose explicit models, in an age where new electronic resources make it possible to do literary research without reading at all: find all the instances of the words beg and beggar in novels by two different authors and write up your conclusions” (Culler 2010, p. 25). I attempt to define my particular close reading practices and provide an explicit model below but perhaps I should first contrast my own techniques with the *hyper reading* and *machine reading* processes advocated by Hayles. “Hyper reading,” according to Hayles, is like what we do online, skimming and skipping, so the text is experienced incompletely and non-linearly, whereas “machine reading” is similar to Culler’s “beg” and “beggar” example above, where computer algorithms are used to analyze patterns in large bodies of text (Hayles 2012, p. 21). Both these approaches can be useful to students, especially when examining textual evidence for analytical papers or semester projects, but I always encourage my students to begin with a thorough close reading first so they know what interests them and what might be worth pursuing through subsequent hyper reading and machine reading.

In this way, print and digital Shakespeares can complement one another and enhance a reader’s understanding of the text. I have found, however, that students who jump straight to searching and manipulating the digital text usually have less compelling arguments in their critical essays. Desmet describes the digitized Shakespearean text as a kind of “alien Shakespeare”—based on Ian Bogost’s “alien phenomenology” (Bogost 2012)—comprising a “disaggregation” of myriad “units” that can be

separated into “semantic segments, words, lines or even morphemes” that are themselves searchable, sortable, and shapeable (Desmet 2017). This malleable quality of the digital work can be invaluable to an informed reader but it can also facilitate simplistic searches (“love” and “hate” in *Romeo and Juliet*, color words in *Othello*, etc.) and cause many students to misread key lines, exchanges, and even entire scenes because they have discovered them out of context after bypassing the initial close reading. Thus, except in those cases where a student cannot follow Shakespeare’s language,¹¹ I recommend waiting until after the first close reading before seeking out online wikis, YouTube performances, typographic visualizations, critical articles, and the like. That way, the students have some idea of what they themselves think before they encounter the impressions or interpretations of another. In the paradigm of my version of close reading that follows, I want to emphasize that, for me, close reading does not supplant or obviate other kinds of reading (hyper, machine, political, cultural, psychological, aesthetic, theoretical, etc.) but rather precedes and enables them.

Before I let my students attempt to read an entire play, I have them practice close reading on something shorter, such as a passage from the first play we will read or a sonnet, such as Sonnet 87, “Farewell—thou art too dear for my possessing.” I find that most students have only the vaguest notion how to read a text closely and analytically, so I remind them of the differences between reading critically and merely summarizing. I emphasize to them that close reading does not simply explain what the text says (we already know that because we have read it carefully); rather, it looks at the form, the word-choice, the images, and so forth and offers an in-depth analysis of the work. Close reading is not only about what a text says, I explain, but also about how meaning is generated. I encourage them to begin with the individual words in the passage, asking them to check the editor’s glosses but also to look up each important word in a dictionary that includes that word’s history and etymology, such as the online Oxford English Dictionary or the limited historical origins section available on *Dictionary.com*. Taking this additional step beyond simple definition allows students to see the beautiful elegance and multivalency of words. Inquisitive readers might discover the religious overtones of the word “profane,” for instance, or the class-based prejudice inherent in words such as “villain” or “vulgar,” or the interesting association of “cuckoldry” with the cuckoo bird.

Once they know the meaning(s), components and histories of the words, I ask them to think about the possible puns that may appear in the poem. I advise them to postpone assigning definite meaning to any word (or phrase or moment) in the text, reminding them that literature is often dense with meaning, so there are often multiple relevant significations for any particular word or image. Keeping this in mind, I then instruct them to look for clusters of related words, pointing out that these could be linguistically similar, thematically related, symbolically linked, and so forth. I assign this close reading exercise—and others like it—online before class, so students will be prepared to say something worthwhile during our class discussion. I do not grade these except for effort and completeness, in order to encourage the students to take risks and say something original. I ask them to imagine themselves as young scholars discovering something interesting and worth pursuing that they alone have noticed. To do this, they must think outside the box and not to be afraid to reach for outrageous connections, knowing they can always drop it later after more reflection. With practice, students can become really skilled at discovering unique and compelling evidence in the text.

For example, Shakespeare’s Sonnet 87 has a curious mix of legal and financial terms: dear, possessing, estimate, charter, worth, releasing, bonds, determinate, granting, gift, wanting, patent, misprision. By paying special attention to the words, students will identify the obvious puns (as with dear, estimate, bonds, determinate, wanting, etc.) but they also open their minds to realms of meaning that it would have been impossible for them to find otherwise. It would not be unreasonable, for instance, for a student to point out the word “fare” (in the financial sense) hidden in “Farewell” or

¹¹ For these students, I usually recommend using a summary to identify the characters and understand the basic plot and then reading along with an audio recording or following a taped performance in order to better understand what is being said.

that “releasing” has the potential for yet another metaphorical lease in “re-leasing.” When students uncover interesting patterns like this, I ask them to consider what such word clusters do or mean and then make assertions based on how the words are working in the piece. I stress that we cannot know for certain what Shakespeare intended (not without a séance) but we can know what the *text* actually says—even, and perhaps especially, when that meaning is not what it appears to say at first glance. By looking at how the text conveys meaning, students usually have better ideas about what the text is saying. This understanding informs their analysis as they consider how some particular image/moment/scene/character should be (re)read. Eventually, I ask them to think about the “so what?” of their analysis—how does their reading helps us to better understand the work—but for this initial close reading assignment, I just ask them to try to say something specific and interesting about what they have found. As a side note, one advantage to having students approach a text this way is that they already have the evidence for their arguments at hand because they begin by looking closely at the text (rather than starting with some vague or simplistic thesis) before they ever try to decide what it says.

Obviously, an assignment such as this one takes more time than most students are accustomed to spending on something as short as a sonnet, especially when they are first learning how to read closely and effectively. But taking this time both improves their analytical abilities and helps students understand that readings such as those from Shakespeare require a greater effort and time commitment than they may be used to. As Bauerlein points out,

Complex texts require a slower labor. Readers can't proceed to the next paragraph without grasping the previous one, they can't glide over unfamiliar words and phrases and they can't forget what they read four pages earlier. They must double back, discern ambiguities, follow tricky transitions and keep a dictionary close at hand. Complex texts force readers to acquire the knack of slow linear reading. (Bauerlein 2011, p. 29)

Intuitively, one would think that an internet-enabled e-reader would be perfect for reading such texts. With built-in dictionaries, access to online encyclopedias, and searchable functionality, an e-reader seems ideal for dealing with the intricacy of something like Shakespeare. Unfortunately, the availability of such information in the e-reader actually makes it *too easy* to find. Students encounter an unfamiliar word or reference, click once or twice to find what it means, plug it into the immediate context, and move on, immediately forgetting the new information and never pausing to think deeply about it.

In my iPads course, for example, I found that the students using the iPads as readers performed comparably to their print-reading peers on basic comprehension quizzes but they almost never remembered any of the vocabulary that they looked up using the in-app feature, even after encountering a word multiple times. Although they reported using the dictionary feature for almost every daily reading—much more often than the 71.5% of students in the Amazon-sponsored e-reader initiative who “used this tool at least once a month” (Schugar et al. 2011, p. 182)—they discovered that they could not recall any of the definitions the following day. More concerning to me, however, was their inability to apply any of the ideas or concepts discussed in academic readings (mostly critical articles) and their lack of analytical prowess when attempting to engage with creative works (mostly novels and short stories). The iPad readers, who began the semester slightly ahead of their peers in the print-only class, formulated much weaker interpretive arguments in their papers, had greater difficulty working with evidence, exhibited poorer critical thinking skills, and demonstrated almost no proclivity for horizontal thinking (the transference of knowledge or skill from one academic setting to another). Although I did not have the foresight to include a question on the three surveys I conducted for them on this, I also believe—based on various conversations we had as a class—that their relationship to knowledge altered when using the e-reader. Instead of seeing knowledge as complex, multiple, and difficult to excavate, I think my digital readers developed the false impression that understanding is simple, singular, and clickable. This also seemed to make whatever they had “learned” disposable.

A final damaging corollary that I witnessed was the iPad users' surprisingly consistent failure at self-assessment. When asked to predict their performance on the final exam and their term paper, the students vastly overestimated their grades, even after a class review session and individual

conferences in preparation for the essays. This lack of awareness in digital readers is particularly distressing because, as Debra Curtis [Vollweiler] and Judith Karp note, “There is a correlation between high metacognitive abilities and academic achievement. It has been suggested that metacognition is the best single predictor of academic performance, surpassing intelligence and other variables” (Curtis and Karp 2007, p. 276). The metacognitive failures I observed in the e-reader students may have been my own failure—I did not emphasize metacognition as much as I do now—but research indicates that digital reading itself may diminish metacognitive proficiency. Rakefet Ackerman and Morris Goldsmith have determined, for example, that “performance under self-paced study was lower for OSL [on-screen learning] than for OPL [on-paper learning]. Moreover, the lower test performance of OSL was accompanied by significant overconfidence with regard to predicted performance, whereas OPL participants monitored their performance more accurately” (Ackerman and Goldsmith 2011, p. 27). Ackerman’s follow-up study with Tirza Lauterman yielded similar results and eliminated tech-based hardware or software problems as a factor, concluding, “the findings of the two studies suggest that learning on screen yields inferior MLR [metacognitive regulation of learning] relative to paper learning” (Ackerman and Lauterman 2012, p. 1825). There are many reasons as to why this may be but I suspect that electronic reading devices encourage online-like reading practices, such as skimming and skipping, and this in turn obviates the slower, more contemplative processing of what has just been read.

In my classes, I am constantly admonishing my students to *slow down*. Often, they flit from one idea to the next without fully developing or exploring any of the points they raise. Rather than diving deep, they barely touch the periphery of their topic before continuing on, like a stone skipping across the surface of a lake. I tell them that I would rather have them tell me ten things about one moment than show me ten moments related to one thing.¹² For the readers in my iPad class, this instruction seemed harder to realize. As a whole, they never developed the close reading and analytical skills to the same level of their peers; I speculate that they had difficulty finding interpretive depth because they had difficulty completing the slower labor that Bauerlein associates with complex texts. Like Bauerlein, Matthew Ostercamp advocates “slow reading” (as opposed to what he calls the “power browse”) in order to better understand the information that complex texts provide. For Ostercamp, this practice challenges students to reevaluate their own reading habits and even the very nature of knowledge itself:

Thus far we have suggested that the case for slow reading starts with questioning the nature of information. We’ve seen that the popular definition of information as a quantifiable piece of communication has resulted in an ongoing quest to increase the speed and lower the cost, of communicating. Information has become a commodity to be consumed in pursuit of some separate goal. The assumption that faster, more efficient information is better information has been largely unquestioned. However, this assumption can be challenged as we explore the ways in which information connects us to a world outside of ourselves and contributes to (or detracts from) our flourishing. (Ostercamp 2014, p. 14)

The information in a Shakespearean play or poem is not like online news or scientific material or commodified data-points. It has the potential to connect students to a vast and fascinating world outside themselves but not if they are reading too quickly or too sloppily. If the information in Shakespeare’s text becomes analogous in the eyes of the students to that of a Wikipedia entry or a Yelp review or a Facebook feed, then they will swipe past myriad beautiful and revealing passages as they search for the next shiny tidbit of interest.

In many cases, when the students do interact with Shakespeare online, the result is an oversimplification of the language or the plot, such as in the popular meme that claims, “*Romeo and Juliet* is not a love

¹² I have stolen this phrasing of “10 on 1” rather than “1 on 10” from David Rosenwasser and Jill Stephen’s excellent textbook *Writing Analytically* (Rosenwasser and Stephen 2015, pp. 103–15).

story. It's a 3-day relationship between a 13-year-old and a 17-year-old that caused 6 deaths. Sincerely, everyone who actually read it." Often, internet encounters with Shakespeare move the students away from Shakespeare's text in favor of more familiar iterations of pop culture, such as in the various *Hamlet* parodies that Desmet cites of Miley Cyrus' hit song and video "Wrecking Ball" (Desmet 2017). Even in instances where the media producers create a complex reimagining of the Shakespearean hypotext—as in *Nothing Much To Do*, The Candle Wasters' web series adaptation of *Much Ado About Nothing* (Jacobs et al. 2014)—the original language and storyline are abandoned for more modern dialogue and action. As I have noted elsewhere, although such adaptations have their own intrinsic value, they are usually based on a hyperreal idea of "Shakespeare" that has supplanted the "real" Shakespeare in the public consciousness (Casey 2017, pp. 61–62).¹³

The sheer volume of information available digitally has many critics and researchers concerned with the effect that digital reading has on an individual's willingness to work through mentally challenging tasks, such as the careful reading of something like *King Lear* or *Measure for Measure*. Wolf, for instance, expresses her apprehension regarding the impact of digital reading habits on the potential success of students entering college:

I am worried about kids who are immersed in digital culture. They will get to college and they will have been Twittering so much that they won't have the patience to read those really long cognitively convoluted and complex sentences. They may not have developed those rich networks which are required in order to read at a high level of sophistication. [...] The effort is what we are going to lose. They are becoming not so much a lazy reader but an atrophied reader. (Cull 2011)

TLDR ("too long, didn't read") has become internet shorthand used by many digital readers to justify skipping over longer online comments or responses but these entries are usually just a fraction of the length of a Shakespearean text (often shorter than the average soliloquy) and almost certainly not as intellectually dense. How then do Shakespearean instructors train today's digitally inundated students to work hard, read carefully, think deeply, and stay focused?

5. Digital Shakespeare

I am sure readers will find the other contributions to this special issue particularly useful in discussing specific resources and addressing how best to employ digital Shakespeare. For this essay, I would like to conclude with a few suggestions and observations based on the research outlined above and my own pedagogical experiences teaching Shakespeare.¹⁴ As I have already mentioned, the first and most important guideline I would suggest is to have the students turn off all potentially distracting electronic devices in the classroom (and ideally when they are studying). In general, I find that digital resources work best out of class as part of the flipped classroom but when they are used in class, they should be controlled by the instructor and projected for the class to see, not viewed simultaneously on multiple devices. I would advise against clickers or phone apps that allow instant polling in the classroom (unless the particular course includes more than 30 students—a class size I strongly oppose but recognize may be out of the control of the instructor) because anonymous surveys promote silence rather than participation. If films or recorded live performances are to be shown, then

¹³ Some might see *Nothing Much To Do* and the "Wrecking Ball" *Hamlets* as extensions of the long history of quoting Shakespeare outlined in Julie Maxwell and Kate Rumbold's *Shakespeare and Quotation* (Maxwell and Rumbold 2018) but in most cases the text itself is not actually quoted but instead alluded to through other modernized language.

¹⁴ I should clarify that these suggestions are mainly for Shakespeare-as-literature courses, not for theatrical performance courses or other topics, such as a course on Shakespearean adaptations. For more information on how I might teach a Shakespearean play in a performance setting, please see my forthcoming "Romeo and Juliet: Cue Scripts Exercise" (Casey 2020); for more information on the various approaches to (and theoretical frames for) Shakespearean adaptation, please see the collection of essays, *Shakespeare/Not Shakespeare*, that I coedited with Christy Desmet and Natalie Loper (Desmet et al. 2017).

these should be screened outside of class time.¹⁵ I am actually in favor of students watching films or performances because they are reminders that Shakespeare is meant to be seen on the stage, not read on the page.¹⁶ Whenever a student complains that she hates Shakespeare, I assure her that that is okay but then I ask what her favorite film is and how many times she has reread the screenplay.

In my courses, the most effective in-class digital resources have been those which clarify the cultural, visual, auditory, linguistic, or performance elements of the play in question. These might be images of early modern dress, recordings of period music, recitations of early modern English pronunciation, woodcuts of contemporary events or individuals, specific stagings of important moments (especially when several productions stage the same moment in very different ways), pictures of obscure historical machines or devices, period maps, and so forth. In each of these cases, I use the digital material to illuminate specific passages or concepts in the particular text we are exploring. I generally do not use electronic resources in class to introduce larger cultural, historical or theoretical issues; for those I usually rely on printed essays or books. When I am teaching students who are still learning how to do research in the field, I may model in class how to search for and utilize information and documents from important databases such as Early English Books Online or Literature Online but for the most part, I introduce students to such resources through directed assignments outside of class. For these, the play in question usually dictates which resource I point them to but students seem to enjoy working with contemporary co-texts available at sites such as the University of California-Santa Barbara English Broadside Ballad Archive (<https://ebba.english.ucsb.edu/>), the Bodleian Libraries' Broadside Ballads Online (<http://ballads.bodleian.ox.ac.uk/>), Glasgow University's Emblem Website (<https://www.emblems.arts.gla.ac.uk/>) or the *Malleus Maleficarum* (the *Hammer of Witches* or the *Hexenhammer* at <http://www.malleusmaleficarum.org/>). Interactive resources, such as the Agas Map of Early Modern London (<https://mapoflondon.uvic.ca/map.htm>), are also very popular. One of the best examples of such an exercise is provided by Michele Santamaria and Kathryn Moncrief in their description of a digital Shakespeare project they assigned, in which the students researched, evaluated, and then suggested edits to the Map of Early Modern London; by engaging the students in real-world collaborative scholarship, the project encouraged the students to become information producers rather than mere information consumers (Santamaria and Moncrief 2016).

One problem, of course, with online resources is that that often move or disappear. The ephemerality of the web means that some excellent resources eventually fail or fall into disrepair as webmasters retire, platforms age out, funding fails, or attempts to monetize properties close off access. The once-useful Luminarium.org (<http://www.luminarium.org/>), for example, has posted no new content since 2012 and the link to the material on Shakespeare is only available through the internet archive, Wayback Machine. Similarly, older episodes of PBS' *Shakespeare Uncovered* series are no longer available for free as federal funding for the organization has dried up. At the same time, new resources are being added daily online. This makes digital Shakespeare exciting but it also has the potential to be a bit overwhelming for the instructor trying to keep up with the latest apps or websites. My advice is to be selective and to be mindful. Teachers of Shakespeare should not simply adopt digital resources because they are

¹⁵ I always make these film screenings required. Colleagues tell me that they can never get their students to attend because they have so many other commitments. I tell my students that they can miss but they will have to watch the film on their own before we discuss it in class (and that they will be quizzed for a grade on it) plus they must attend two additional university events approved by me to make up for missing—usually public readings by visiting authors or university theatre department productions. In the last five years, only one student has been unable to rearrange her schedule and attend.

¹⁶ For a discussion of the way Shakespearean adaptations and stage productions are themselves valid iterations of "Shakespeare" and not secondary to their print relatives, please see my "Introduction" with Christy Desmet and Natalie Loper in our collection *Shakespeare/Not Shakespeare* (Desmet et al. 2017), Douglas Lanier's "Shakespearean Rhizomatics" (Lanier 2014), Richard Burt's "Shakespeare, 'Glo-calization,' Race and the Small Screens of Post-Popular Culture" (Burt 2003), and W. B. Worthen's *Shakespeare and the Authority of Performance* (Worthen 1997) and *Shakespeare Performance Studies* (Worthen 2014, especially chapter 1 "Shakespeare Performance Studies"). For examples of the use of YouTube materials in the classroom, please see Ayanna Thompson's chapter 7 "Archives: Classroom-Inspired Performance Videos on YouTube" in *Passing Strange* (Thompson 2011) and Stephen O'Neill's chapter 5 "The Teaching and Learning Tube: Challenges and Affordances" in his *Shakespeare and YouTube* (O'Neill 2014).

new or because they are pushed on them by companies or administrators. Instead, they should be thoughtful about what kinds of electronic tools they place before their students. In many cases, these products have been shown to damage the students' abilities to read deeply and to think critically, so it is important to consider the pedagogical goals associated with any digital apparatus and to educate students about their potential benefits and dangers. This essay has presented a more cautious appraisal of digital Shakespeare than most but it is not meant to be prescriptive nor conclusive. As Sharon O'Dair observes, "Our knowledge doesn't accumulate; it circles or circulates, which is why literary history remains a vibrant and contested field" (O'Dair 2014, p. 123). No doubt we will return to the questions I have raised here, with differing value judgements and conclusions. In the end, each Shakespearean must decide which resources are worthwhile and which are best left alone but we should remember that students are already skilled at swiping, browsing, and reading superficially. Our objective, as I see it, is to use both print and digital resources to enhance their understanding of Shakespeare—to help them learn to dive down a full fathom five into the text rather than merely splashing about the surface.

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