
Panopticon or Panacea? Google Docs, Word Processing, and Collaborative Real-Time Editing

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Abstract

Thirty years ago a debate broke out in humanities departments over word processing programs, new software that increased the speed of drafting, while simultaneously allowing continuous editing – a feature that some critics found problematic. Collaborative real-time editing (CRTE) represents a similar technological change to composition. CRTE is technology incorporated into Google Docs that allows multiple users to edit the same document simultaneously. However, the socialization of the drafting process brings new challenges: it exposes writing at an earlier stage, and changes composition from a private act into a semi-public one. CRTE could transform the lonely nature of drafting into a collective experience. We ought to consider how best practices, combined with interface design, can mitigate the drawbacks of socialized drafting, while maximizing its benefits.

Keywords

Digital scholarship; Knowledge production; Tools and practices; Virtual research and learning environments

Résumé

Il y a trente ans, qu'un vif débat s'est engagé dans les départements des sciences humaines au sujet des programmes de traitement de texte. Ce nouveau logiciel a accéléré les travaux de rédaction en comparaison à l'écriture sur clavier, tout en permettant l'édition continue—une caractéristique potentiellement problématique.

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L'édition collaborative en temps réel représente une évolution technologique semblable à celle de la composition. L'édition collaborative en temps réel est une technologie intégrée dans GoogleDocs qui permet l'édition d'un document par plusieurs utilisateurs simultanément. Cependant, la socialisation du processus de rédaction pose de nouveaux défis: elle révèle l'écriture plus tôt qu'habitude et le processus de composition devient semi-public au lieu d'être privé. Parallèlement, l'édition collaborative en temps réel pourrait transformer l'expérience de rédaction, afin qu'une expérience solitaire devient collectif. Lorsque nous transitons vers une nouvelle ère de collaboration nous devrions considérer comment les meilleures pratiques, ainsi que la conception des interfaces, peuvent atténuer les inconvénients de la rédaction socialisée tout en maximiser ces avantages.

Mots clés

Savoir numérique; Production du savoir; Outils et pratiques; Environnements de recherche et d'apprentissage virtuels

Introduction

Thirty years ago a debate broke out in humanities departments over word processing programs, new software that increased the speed of drafting compared to the typewriter, while simultaneously allowing immediate editing – a feature that some critics found problematic. The dual optimism and uncertainty around this technology is encapsulated in Helen J. Schwartz's (1982) paper in *College English* titled "Monsters and Mentors" (p. 141). It was thought that the ease and immediacy of revision afforded by word processors would stifle writers' abilities to view the larger scope of their papers and the "creative flow" considered essential to good writing. With the growing ubiquity of Google Docs we are facing a similar shift in the writing instrument. Collaborative real-time editing (CRTE) – technology incorporated into platforms such as Google Docs that allows multiple users to edit the same document simultaneously – effectively socializes the drafting process, exposing writing at an earlier stage, and changing composition into a self-consciously semi-public act. This article will first detail early humanist fears around the shift to word processing programs through a literature review; from there, a discussion of the emergence of CRTE will follow. All our research for this literature review occurred in Google Docs itself. The second half of this article will be a tool review and a reflection on the process of writing and conducting the research for this article. Both authors found that CRTE did engender anxiety due to the fact that our writing was immediately visible to each other; it also led to a fruitful collaboration and generated a productive writing experience. We shared with eighties humanists a fear that this new technology might impact our creativity; however, through CRTE we found the technology enhanced our discourse and subsequent article.

The adoption of word processors

In an essay that traces the historical patterns in humanist study of computers and writing, Michael Knieval (2009) argues that the entry of technology into English departments in the eighties was threatening to many. Technology seemed at odds with an "ethic long built on enduring values, constructed in opposition to the instrumental logic of science and the ever changing nature of technology" (p. 95). Indeed, Schwartz

(1982) warned in “Monster and Mentors” that unthinking incorporation of computers could “brutalize the mind to the level of machine” (p. 141). One of the first articles written in the field of humanities computing sought to divest humanists of stereotypes that portrayed computers as completely linear and instrumental. Ellen Nold’s (1975) “Fear and Trembling: The Humanist Approaches the Computer” demonstrates the technophobia that existed among humanists in the mid-seventies, but also the presence of voices excited to teach writing with these new technologies. Nold challenges the idea that the computer “quells creativity” (p. 269).

Nold sought to reposition the computer as a partner that could assist with creation and invention in the humanist mode. Her article was the first of many that focused on the impact of computers on the process of writing, and in 1983, *Computers and Composition* became the first journal dedicated to such questions. The inaugural issue is introduced with a letter from the editors stating that the journal’s goal is to provide a forum to integrate computers into the teaching and practice of composition. However, the editors go on to ask the question “Do [computers] fit at all?” (Selfe & Kiefer, 1983, 1). Thus even among proponents, though there was excitement and optimism, there were also lingering concerns. The following section will focus on two concerns regarding the ease of text revision enabled by word processors that appear in studies from the eighties and early nineties. Setting these historical reactions to word processing alongside our own experience with CRTE, demonstrates that similar discourses undergird reactions to new writing technology.

Word processors: The impact of easy revision on a holistic view and creative flow

The possible insidiousness and novelty of the easy revision afforded by word processors was captured by Steven King’s (1983) short story “Word Processor of the Gods,” in which a haunted software allows the protagonist the ability to delete and insert from reality with the ease of computer text revision. King’s story demonstrates how powerful the ease of revision afforded by word processors seemed to contemporaries. Indeed, it is concerns with this ease of revision that appeared in the studies we surveyed; specifically, that the ease of revision offered by word processors might detract from a writer’s ability to conceive of her writing holistically. The fear that a focus on minutiae, instead of the big picture, would negatively impact the writing process is evident from 1975 through to the early nineties. A 1983 article by Richard Collier provides evidence of this concern, writing that “inexperienced writers become ... entranced by the superficial” (p. 154). In fact, for Collier (1983) it was not just easy revision that was narrowing writers’ views of their work. The early word processing programs he used only allowed him to view one page at a time, a limitation he believed would further interfere with “thinking of the composition as a whole” (p. 153). In 1992 the authors of a large study of eighth grade students began with the hypothesis that the ability to constantly revise with a word processor might “interfere with the constructive process of composition” (Joram, Woodruff, Bryson, & Lindsay, p. 167). Concerns about easy revision still existed in the early nineties due to multiple studies in the eighties that had had varying results; some suggested easy revision improved writing, while others claimed that increasing the frequency of revisions distracted writers from conceptualizing the larger context of their work (Joram et al., 1992, p. 168-169). The

existence of this 1992 study shows that concerns surrounding easy revision were still thought significant enough to warrant this major study. The word processor, it was feared, was literally limiting users' overall view of their writing.

The second concern surrounding word processors that we identified – along with the notion that word processors were narrowing writers' views of their work – was a concomitant idea that they would disrupt a spontaneous creative flow considered essential to writing. The initial stages of writing, it was thought, ought to consist of an uninterrupted flow of ideas that pausing to edit would interrupt. Nold (1975) expresses this concern in her foundational paper, writing that “a fine program never interrupts the flow of the student's mind” (p. 271). The 1992 study of eighth grade students justifies its concerns about easy revision with reference to models of creativity derived from “self-reports of highly creative people” (Joram et al., 1992, p. 170). They claim that these and other studies show that the first stage of the creative process necessarily involves the “free flow of creative ideas ... without pausing to make corrections” (Joram et al., 1992, p. 170). Overly critical examination of prose too early in the composition process was viewed as detrimental to writing. Thus, a discourse on writing as requiring a “free-flowing,” spontaneous creativity, as well as an ability to see the larger context of one's work, undergirded concerns about the word processor.

The shift to collaborative real-time editing

In Colette Daiute's 1986 study of the effects of word processors on the writing of junior high school students, she posits that “writing involves the complex interaction of parallel processes, in this case physical and cognitive processes.” Therefore, she argues, “the writing instrument can affect the writing process” (p. 141). This is a premise that underlies humanist concerns with word processing technology: that technology is part of the system of writing. Modifying it modifies that system. In retrospect the concerns of humanists in the eighties and nineties seem overstated. Since word processing has become ubiquitous, concerns about it have mostly been forgotten or have become invisible. That does not mean Daiute's premise is incorrect. Changing the technological interface between the mind and the page changes the writing process. Therefore, moments of transition to new technologies are essential moments of reflection about the writing process. As we become more accustomed to the rapidity of changing technology and media we may fail to notice fundamental technological shifts. Part of our project in this article is to signpost CRTE as a fundamental shift in writing technology, possibly a more significant one than the transition to word processors. As such, it demands critical scrutiny.

What is collaborative real-time editing, and why does it represent a transition from traditional word processing programs? CRTE was actually first demonstrated in 1968 by Douglas Engelbart. However, actual commercial implementations of CRTE did not emerge for several decades. The first appeared in the early nineties for Mac OS; widespread use of CRTE would not occur until the mid aughts, as browser-based applications such as Google Docs/Google Drive began to become more popular. CRTE allows multiple users to simultaneously edit the same word processing document (and with Google Docs the functionality extends to spreadsheets and slideshows). That is, both users can be inside the same page, at the same time, watching their collaborator's

cursor blink out letters. It is the simultaneity of collaborative writing in Google Docs (and other CRTE applications) that is inherently different from traditional forms of collaborative writing, as well as other Web-based writing formats such as wikis.¹

Figure 1: Demonstrates CRTE, as the authors simultaneously edit the paragraph above.

The Shift to Collaborative Real-Time Editing

In Colette Daiute's 1986 study of the effects of word-processors on the writing of Junior high school students she posits that "writing involves the complex interaction of parallel processes, in this case physical and cognitive processes." Therefore, she argues, "the writing instrument can affect the writing process" (p. 141). This is a premise that underlies humanist concerns with word processing technology: that technology is part of the system of writing. Modifying it modifies that system. In retrospect the concerns of humanists in the 80s and 90s seem overstated. Since word-processing has become ubiquitous, concerns about it have mostly been forgotten or have become invisible. That does not mean Daiute's premise is incorrect. Changing the technological interface between the mind and the page changes the writing process. Therefore, moments of transition to new technologies are essential moments of reflection about the writing process. As we become more accustomed with the rapidity of changing technology and media we may fail to notice fundamental technological shifts. Part of our project in this paper is to signpost CRTE as a fundamental shift in writing technology, possibly a more significant one than the transition to word processors. As such, it demands critical scrutiny. What is collaborative real-time editing and why does it represent a transition from traditional word-processing programs? CRTE was actually first demonstrated in 1968 by Douglas Engelbart. However, actual commercial implementations of CRTE would not emerge for several decades. The first appeared in the early 90s for Mac OS; widespread use of CRTE would not occur until the mid aughts, as browser based applications such as Google Docs/Drive began to become more popular. CRTE allows multiple users to simultaneously edit the same word-processing document (and with Google Docs the functionality extends to spreadsheets and

Note: To view the animated version of Figure 1, please visit the html version of this article.

With traditional word processing collaborators could email or (prior to email) exchange physical drafts, making comments and revisions and discussing changes. Though collaborative, revision occurs in a word processing program that one writer alone has access to at that time. Thus there is a temporal remove between collaborators' entry of text into the word processing document. Writing, in this sense, is still a solitary exercise. The writer is alone in the page, she may share her work with others, receive feedback, collaborate as much as is possible within the paradigm of individual word processing, but she is still alone in that instance of the word processing document.² Wikis, which offer a superior form of collaboration compared to emailing successive drafts, have been touted as alternatives to traditional word processors (Dishaw, Eirman, Iverson, & Phillip, 2011). Whatever the benefit of wiki-based writing, it still operates within the paradigm of traditional word processors in that collaborators cannot view changes until they are submitted to the wiki. With CRTE collaborators can view (see Figure 1) these changes live; there is no "send" or "submit" button. Removing this layer raises the performative stakes of drafting, as the words that flow from one's cursor are immediately visible. The potential effects of this change have not yet received consideration.

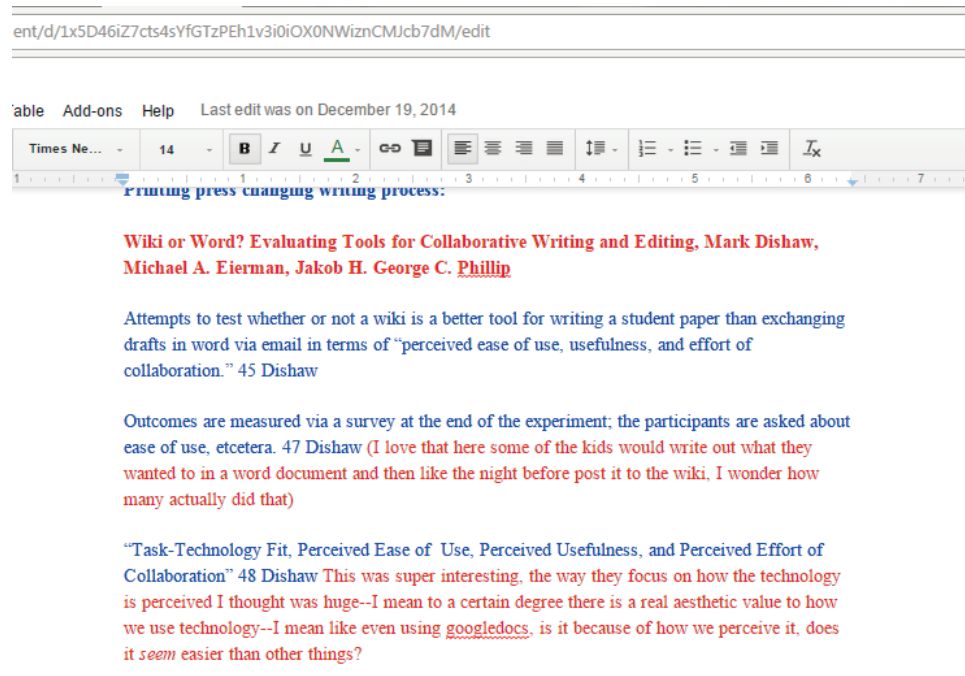
Google has anticipated the pedagogical potential of Google Docs and CRTE. In an advertisement appealing to educators, Google (2010) describes its product as "true collaboration" (p. 2). The advertisement proposes that students could share their papers

with teachers, allowing the teacher to view their writing as it progress. “Teachers can provide feedback at anytime that it’s important in the revision cycle—not just at the designated due dates” (Google, 2010 p. 3). Would it be beneficial for students if their teachers could view their drafts developing from the earliest stages? How might it affect cooperative writing between students to be inside the page with one’s collaborator? What does the change to a new writing technology expose about the conceptions that undergird our own notions of writing? As a first step toward answering these questions, the authors of this article sought to test the nature of CRTE by conducting the research, note taking, and writing that constitute this article entirely in a shared Google document.

CRTE tool review

We decided to write our article entirely in this platform to better understand how CRTE could generate anxiety or alter the writing process. We will use our experience with our specific note-taking document as a method to observe how similar the anxiety around word processors in the eighties and nineties is to our current anxieties regarding CRTE; while anxiety around CRTE was always present, both authors noticed the increase in productivity and discourse through this type of live collaboration. Within our notes and our composition, Mark wrote his notes in a blue font and Taylor in a red font (Figure 2); this was to better differentiate and notice our individual interactions and use of Google Docs.

Figure 2: Taken from our note document, this figure shows the method we used to differentiate authors (blue font is Mark and red font is Taylor).



In writing the actual article we decided to use the same font colour and type, working on and editing each section together a few months after completing the note-taking document that is the subject of our case study. We engaged with one another within the

document and in the comment feature of Google Docs; all collaboration took place via Google Docs, email, and Skype.

Figure 3: Spelling mistakes are highlighted live via-red squiggly lines, making surface level errors more noticeable to collaborators.

prima-fascie, represents a similar impediment to that “free-flow of creativity; knowing that one’s notes are viewable to others could provoke another level of internal self-judgement.

Interesting link to the Romantics, I mean it’s especially interesting with Byron mostly because there is this great paradox of like genius and off-the-cuff-ness--the whole idea of creativity is

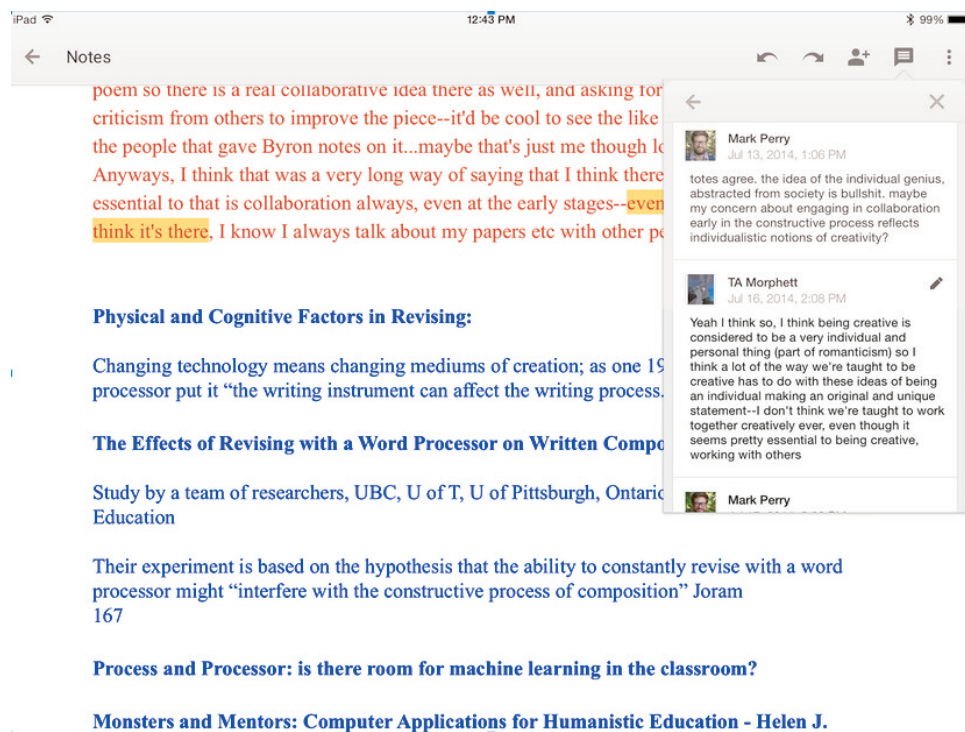
In beginning the process of writing this article, one of the first concerns that arose for us was the social anxiety induced by having to perform drafting in front of a peer. One of the first comments Taylor made was, “I just realized my browser for googledocs doesn’t have spell check ... now I know I’ll have a bunch of spelling mistakes.” Mark responded, “I feel like I’m not that great at spelling either, probably due to spell check making it pretty unnecessary these days.” Throughout the process we both discussed anxieties around writing in this way. Both authors were concerned about appearing unintelligent and for Taylor, as can be seen in the exchange above, there was a real concern with “surface level” issues, such as spelling. In a CRTE environment there is the potential to see mistakes as they occur; one collaborator can watch the other’s cursor and view the red line appear under any mistake (Figure 3). Creating a collaborative environment where the interaction is text based meant that we had to articulate ourselves through the writing; this generated concerns around smaller surface level issue such as spelling, which might otherwise have been unimportant.

Throughout the experience both of us noticed a heightened awareness of our writing and work progress; it became more important to stay on schedule and keep up with the tasks we had assigned ourselves, as we could see day-to-day how much work we had each done. For example, on any given day Mark could go into the document and see the work Taylor had done the previous morning; that increased both authors’ awareness of each other’s work output and, wanting to each do their part, both authors’ increased their respective work output to match one another. We were both intensely aware that we had an audience watching, reading, and commenting on our individual progress within the document. Working collaboratively there was a sense of immediate feedback and discourse that pushed ideas and concepts further. Any ideas presented were generally commented on immediately and a discussion would generally follow. This allowed the collaborative environment to be extremely different than either of our normal writing and research practices; it increased our anxiety, while simultaneously creating an environment conducive to generative discourse and dialogue.

How we chose to communicate would change depending on the format we used to communicate with in Google Docs itself; our comments to one another differed depending on whether they were within the page, or outside the page in a comment bubble. Within the comment section, conversation formed around what else to research, personal opinions about the articles, and side notes; this is the area where there would be personal anecdotes and the occasional obscenity. The comment feature within the CRTE system allowed for a break from the more intense environment of the

document itself. For example, at one point Taylor expresses concerns about writing too much within the document, Mark responds in the comment section stating that it does not matter. The comment feature (see Figure 4) within the platform allows for more personal interactions than the document itself, serving as a meta-space from which to observe and comment on the performance occurring in the actual document. With the comment feature there is a space away from the project to discuss issues of form, style, or method with one another. This feature is key to the collaborative environment because it sets up the ability to have more than one type of conversation within a single document.

Figure 4: The comment feature available in Google Docs
(screen-capture taken from an iPad)



Throughout the process most of our comments, especially to one another (when we were not summarizing) almost always began with “I think, feel, mean, agree” et cetera. These types of comments were meant to open up dialogue and discussion between us, but also reveal our awareness of an audience of our individual writing process. We both end up performing, constructing our identities for one another; it is noteworthy that both our identities within the Google Docs were not articulated in the same way as a conference paper, but in a less formal, although still professional, conversational way. For example, Mark wrote when summarizing one of our articles, “a study on four female students testing the difference between drafting and editing traditionally (what the hell was traditional?) and with word processor.” Taylor replied, “I think it’s interesting for us to look at this because when did we ever do traditional editing, I’ve been in computer labs since Kindergarten, we even got our own floppy disks.” Mark replied, “yeah totally. i don’t think I’ve ever written anything with a paper and pen.

maybe in elementary school...?” This is just one instance, but it is quite typical, that demonstrates how our discourse was conversational, couched in “I thinks,” and intended to represent the subjectivity of our perspectives. As a result, we felt more aware of our own subjectivity and freer to express and deal with the doubts that often arise during drafting.

Much of our conversations ended up centring on ideas of the Romantic genius that supports many notions of creativity, as well as what constitutes collaboration. Both of us had just come out of writing papers on the Romantic Era, specifically Shelley and Byron, and sometimes our conversation drifted away from CRTE. At one point after a long paragraph about Byron, Taylor states, “Anyways, I think that was a very long way of saying that I think there is free-flow creativity but essential to that is collaboration always, even at the early stages – even when it’s hidden I really think it’s there, I know I always talk about my papers etc with other people.” Our conversation around this point went on in the comment section, with Mark finally stating, “social-anxiety has the potential to shut people down, eliminating whatever ideas they might have added to the creative process. Google Docs might lend itself to more socially-confident people, which is probably something to be aware of.” This exchange is interesting because the form itself provides insight into the content of the exchange; like most of our work within the Google Docs this was a collaborative moment, made stronger by that collaboration. In a way the form of Google Docs itself reveals a necessary aspect to the writing process, discussion, and collaboration. Engaging with this new writing medium exposed the fact that we were clearly influenced by a Romantic ideology of the solitary creative genius. Just like our predecessors had concerns about word processors, we worried that anxiety caused by interacting during the early phases of drafting might impact our creative process; the way we expressed these anxieties was through a collaborative mode that enhanced our discourse and allowed the ideas within our notes and subsequent article to grow.

It is easy to dismiss those who express concerns about new technology as luddites. With the hindsight of history, the idea that word processors might interfere with the writing process perhaps now seems unlikely. Though we are enthusiastic about the benefits of writing in Google Docs, will our concerns about writing live in front of collaborators appear unfounded to future historians of composition? Perhaps, but Collier’s complaint was prescient when he wrote that his word processor ought to allow him to view more than one page at a time. Modern word processors allow the user to zoom in and out – to see the whole paper from afar, or to view pages side by side. In this regard, increased sensitivity to the concerns of users by technology developers can only improve the tools we use; we ought to remake technology not have it remake us.

Interface suggestions

In this spirit, throughout our project we kept notes on how to improve the interface of Google Docs itself, as well as best-practice suggestions for using the technology. We both felt a feature that allowed for invisible or private work was needed where one could decide when to post progress, allowing for the fact that collaborators might not always want to write “in front” of each other. We also felt that the system needed to be more consistent across platforms; Mark worked on a laptop, Taylor on an iPad, and the

interface difference between these two platforms was occasionally difficult. For example, at the time, Google Docs lacked spell check on the iPad application. We also felt that having the ability to have multiple windows open at once would improve the function of the space. There needed to be a clearer space for the comment section or a clearer “chat” function where collaborators could speak to one another. Furthermore, we believe that collaboration in Google Docs requires awareness that writers may not appreciate having their work viewed live, especially if there is a large difference in levels of experience, seniority, or rank. Collaborators ought to be informed that it is not necessary for them to write directly in the Google Doc, that they can copy and paste their writing from a traditional word processor if they prefer; making it clear that this will not reflect poorly on them is essential to decreasing the risk of infusing social anxiety into the drafting process.

Conclusion

Google Docs changed how we wrote this article; the shift to CRTE systems such as Google Docs will change the writing process. Just as debate broke out thirty years ago with the shift to word processors, the use of CRTE systems will generate anxiety and optimism. Early concerns regarding “creative flow” and obsession with minutia within a word processor may reemerge with CRTE; these concerns should be carefully considered. Platforms like Google Docs socialize the drafting process, altering drafting in a way that could possibly induce social anxiety, but also productive dialogue and discourse in the early stages of writing. Based on our experience using Google Docs, we found that CRTE increased our anxiety but also allowed for a generative and productive conversation around issues of creativity and the writing process. Humanist fears of the eighties and nineties around word processors should be considered as we move forward into a CRTE environment. Allowing for multiple methods of both private and public writing within a platform such as Google Docs can mitigate some of these concerns while allowing for the emergence of a new, and potentially beneficial, process of writing.

Notes

1. Prior to collaborative real-time editing, the same effect could be achieved by writers simultaneously writing on the same piece of paper.
2. Video games provide a pertinent point of comparison. In turn-based strategy games, such as the Civilizations series, players take turns to play (as in chess). In real-time strategy games, such as StarCraft, players carry out their moves simultaneously. In a turn-based game, even if the players are collaborating and working toward shared goals, they still essentially “edit” the game world in a turn-based manner.

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