Literature Review: Technology in Writing Instruction

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Teachers are directed to include technology in their instruction. For some teachers, using a slide deck or typing up a final draft of an essay satisfies that requirement (Applebee & Langor, 2011; Hutchison & Reinking, 2011). The myriad types and applications of Information and Communication Technologies (ICT) can be overwhelming, and educators may not know how to fold ICTs into the curriculum effectively. Small changes, such as utilizing cloud-based writing tools or using word-processing during the composition of a text, can increase digital literacy. The following review of literature contextualizes the need for ICTs in writing instruction, presents the lack of concurrent ICT use as an issue, and confirms the validity of incorporating electronic feedback into writing instruction.

Context

As ICT evolves, the protean modes of writing increase. Graham and Perin (2007) argue that the prevalence of digital communication in daily life has transformed the proliferation of writing. More jobs require written documentation, including mixed media output. Additionally, more community college students enroll in remedial composition courses. In their meta-data study, the researchers found a positive impact from the use of word processing, particularly with low-achieving writers.

Indeed, Relles and Tierney (2013) analyzed the digital literacy skills of 91 low-income, first-generation, low-income students enrolled in remedial writing courses. These students who are already academically challenged are further held back by digital literacy deficiencies. Weak argumentative skills restrict the quality of writing, both digitally and traditionally. However, the inability to decode visual lexicons hinders navigation and, subsequently, access to academic resources. Lack of awareness of computer capabilities restricts using technology for educational

purposes. Finally, offline writing often relies on online search for credible sources; ignorance of conducting efficient searchers creates a disadvantage.

Relles and Tierney (2013) suggest remedial composition courses should expand their focus to remediate digital literacy along with college writing. Ultimately, poor writers do not know how to go about acquiring, evaluating, or integrating online information. This finding is consistent with Bromley (2010), who argues that because the future of reading and writing is dramatically changing, critical visual literacy is essential for all students. The Internet is a quickly accessible, vast amount of information: animation, pictures, print, and sound. The literacy skills required to process that information include specific analytical abilities applicable to digital media. Relles and Tierney (2013) find that low-income students lack those skills.

Issues

Although, as Relles and Tierney (2013) argue, digital and analog literacy should be taught, or at least remediated, concurrently, ICT integration is not commonplace in writing instruction. In their study of middle and high-school writing instruction, Applebee and Langer (2011) found that much of the use of technology, such a slide-decks or projections, reinforces traditional teacher-centered instruction. Although, there were sporadic instances of ICT, including social networking, Blackboard, wikis, and blogs, most English teachers reported using word processing for turning in the final copy of a writing assignment. There was little use of embedding audio, graphics, or video. Also, ICT was rarely used for collaborative work.

The lack of ICT integration does not seem to be because of a lack of resources. Instead, there is a perception that ICT is separate from literacy. Hutchison and Reinking (2011) surveyed 1,441 literacy teachers in the United States to gather data regarding the availability and the use of ICTs, attitudes about the significance of ICT integration into literacy instruction, and perceived

challenges to integrate ICTs. The study shows teachers' view technology as something outside of the standard curriculum. Additionally, many of the teachers the researchers surveyed hold a superficial view of integrating technology into instruction, based on the inclusion of technology rather than working towards specific curricular goals, similar to the findings of Applebee and Langer (2011).

One Solution: Incorporate Digital Feedback

Writing instructors can incorporate technology as an aspect within their instruction rather than a tool outside of their lessons. One challenge of incorporating technology into writing is balancing between writing instruction and technology instruction. Coskie and Hornof (2013) offer strategies they developed for classroom integration of technology, one of which is a quick instruction mini-lesson in technology as needed. During the writing lesson, when explicit instruction is required, they recommend interrupting the lesson for a 3-minute "midworkshop tech tip" with a focus on one aspect of the technology determined through formative assessment. Students incrementally accumulate a variety of skills in small, manageable steps. Coskie and Hornof argue that the driving principle of technology use with writing is to maintain solid writing instruction. Following that, teachers should embed technology into the writing, ensure the students are on task, and remember to promote collaboration skills.

Moreover, migrating pen-and-paper to digital writing affords composition instruction not possible with an analog modality. Soobin, Warschauer, Bibbin, and Lawrence (2014) studied the use of Google Docs as a cloud-based writing instrument. The researchers found that both teachers and students have a positive perception of Google Docs. Students stated using the online writing tool made it easier to organize their work, easier to revise and edit their writing, and they felt they received more feedback than with paper.

From the research, it seems the most positive outcome of using Google Docs was the feedback. Soobin et al. (2014) determined that with no direct instruction for giving feedback, direct edits and commentary feedback were the most common forms. However, the feedback was sentence-level rather than content and organization. Yet, the researchers claim the writing practices of the students were similar to those that usually occur in college and career settings. Also, teachers utilized the synchronous access and editing features of cloud-based technology to provide direct instruction of grammar and mechanics through modeling and color-coding activities. Further, the simultaneous viewing and editing of documents enabled collaborative error analysis of writing errors.

Professional development in the use of cloud-based, synchronous technology is needed, however, so that it becomes part of instruction not apart from instruction. Perhaps proving the findings of Applebee and Langer (2011), Chambre (2017) extols the use of Google Docs, particularly for students with disabilities. Aside from easy access and increased engagement, she found that the comment feature maximized her writers' workshop with students through the ease of management and ability to monitor her students' writing in real-time. Chambre's primary use of comment was to redirect the students back to writing. Although redirection is a valid use of the comment function, findings show the efficacy of commented feedback about content.

In a postsecondary study of electronic feedback perception, McCabe, Doerflinger, and Fox (2011) determined that faculty found having a record of student submissions and instructor feedback advantageous. The researchers' data show that many students and faculty associate improved learning outcomes on written assignments with the use of electronic feedback. Both students and instructors reported that compared to handwritten feedback, electronic feedback increased feedback clarity, was more environmentally friendly, and resulted in faster, better, and

more detailed feedback. These findings are supported by Johnson, Stellmack, and Barthel (2019), who studied feedback forms in an introductory research methods course over two years. The study shows that graders provided more feedback on both content and mechanics and had more long comments when using electronic feedback although graders using electronic feedback made more direct edits (rewrites). Note that students expressed a preference to marginal comments rather than direct edits, which they found confusing rather than helpful. Electronic feedback, Johnson et al. (2019) conclude, led to higher-quality feedback and subsequently better student writing. Additionally, students preferred electronic feedback to handwritten comments on hardcopy essays.

Conclusion

As literacy changes, ELA teachers must incorporate digital literacy into their curriculum as a part of the curriculum not apart from it. The most effective way is to replace one aspect of writing instruction with an enhanced form. Conferencing with students, speaking with them about their writing, encouraging academic risks, are all easily accomplished through ICTs such as cloud-based writing instruments. The focal point of composition instruction should be composition. However, the ICTs available can augment that instruction. The nature of cloud-based tools is collaborative and the next step is to teach students how to use these tools to co-author and co-create.

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