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Technology and the Writing Classroom: An Exploration of Possibilities and Challenges

In “Technology and Changing Roles in Education,” Zane L. Berge argues, “Technology needs to become as interwoven in educational delivery as it is in society - in order to become an integral part of teaching and learning throughout the student’s life-long learning environment” (Berge 1). For teachers of writing concerned with issues of communication, composition and literacy, technology offers many educational possibilities. Steven D. Krause, writing in 1998, explains four pedagogical benefits of using Web technology in the writing classroom: “The Web makes the distribution of course materials easy, it provides excellent opportunities for student research, it is a unique and ‘real’ publishing opportunity for students and teachers, and it is an excellent facilitator of collaboration between teachers and students, regardless of institution” (Krause 107).

Since the time of Krause’s writing, the capabilities and presence of digital technology have grown tremendously. At the same time, the potential for technology in the writing classroom has also grown. Writing more than ten years after Krause, Arthur N. Applebee and Judith A. Langer note, “One of the biggest changes to affect the teaching of writing in the past two decades has been the spread of technology, and with it the development of powerful word-processing software and Internet resources. The National Commission on Writing was enthusiastic about potential benefits of technology for writing instruction” (Applebee and Langer 22-3).

Indeed the potential benefits of technology for writing instruction have been the focus of much research in the past two decades. This paper will examine four of these benefits: collaboration, writing as a social act or process, creativity, and classroom culture. In addition to these benefits, the limitations of technology for writing instruction will also be considered.

### *Collaboration*

The use of technology in the teaching of writing has some highly apparent benefits, such as collaboration. Krause writes that digital technologies offer writing students and teachers opportunities for collaboration that is both active (for example, working on writing projects together or publishing a work together) and passive (such as sharing casual comments and suggestions) (Krause 120-1). In other words, technology can be used to both create collaborative writing projects and to facilitate conversation and criticism about writing.

Research shows that various types of Web technologies can be used to promote collaboration in writing. In 1990, Jeffrey Sirc and Tom Reynolds wrote about the use of local-area computer networks (LANs) to provide “students a broader, richer, more pluralistic view of writing, and...help them to conceive of writing as a collective activity” (Sirc and Reynolds 53). Since that time, Web technology has expanded, offering collaborative writing opportunities through wikis, social networking sites, and more (DeCosta, Clifton and Roen 17–19). Meredith DeCosta, Jennifer Clifton and Duane Roen discuss the active collaborative potential of wikis and collaborative word-processing software such as Google Docs, which allow students to not only share ideas but to write together (DeCosta, Clifton and Roen 17). Mark Dishaw, et al. also discuss the use of wikis for collaboration:

The education community has grabbed onto the idea of a wiki as a way to increase student engagement and collaboration within the classroom. Educators

have found many different ways to incorporate the use of wikis in classes.

Common uses include creating a shared annotated bibliography of class readings; developing shared lecture notes; publishing syllabi, assignments, and handouts; and having students collaborate on shared documents such as research papers, reports, study guides, article critiques, etc... (Dishaw, et al. 43-4)

In addition to Web technologies for active collaboration, DeCosta, et al. also note the passive collaborative potential of social networking sites, such as Facebook and Twitter, to share writing feedback and conduct brainstorming activities (DeCosta, Clifton and Roen 18).

The benefits of using these Web technologies for collaborative writing are frequently framed as a way to better prepare students for a technology-enhanced, networked world (DeCosta, Clifton and Roen 15; Dishaw, et al. 52). Dishaw notes, “As businesses continue to perform work over a broader geographic region and require more collaboration among their workers, technological support becomes even more important” (Dishaw, et al. 52). DeCosta, et al. argue that this trend necessitates workers with “21<sup>st</sup> century skills” that include “a focus on creativity, critical thinking, communication and collaboration” (DeCosta, Clifton and Roen 15). However, the workplace is not the only setting that requires collaboration. Cheryl Hawkinson Melkun argues that as opportunities for online education increase, collaboration becomes more necessary (Hawkinson Melkun 34). She writes, “The need for collaborative work is great – if not greater – among online, nontraditional students than for traditionally aged residential students...Being part of a writing group decreases isolation, aids retention, and helps students to define academic writing, expectations, standards, and practices” (Hawkinson Melkun 34).

In light of this necessity for collaboration in both the workplace and education, DeCosta et al. argue for a revised definition of literacy: “For many stakeholders in education, literacy

should no longer be defined as one individual student cognitively engaging in a particular writing or reading event, but rather as a complex social act that involves collaboration” (DeCosta, Clifton and Roen 17). Condon, Sirc and Reynolds, and Hawkinson Melkun also address this idea that collaboration in the writing classroom results not only in the exchange of composition knowledge and skills, but in the exchange of social and cultural knowledge (Condon 51; Sirc and Reynolds 67; and Hawkinson Melkun 37). Hawkinson Melkun writes:

Web conferencing technology permits collaborative student groups to participate in a dialogic give-and-take exchange, the foundation of social constructivist learning theory. Diverse students are able to share their perceptions, realities, and social constructs as they work together to create a knowledgeable discourse community in which they exchange ideas about their writing and the writing of their peers. Students are able to discuss, debate, collaborate, and reach consensus when working within the Web conferencing platform. (Hawkinson Melkun 37)

In this way, technology not only enables students to work collaboratively on writing projects and assignments, but allows students to better understand to cultural identities and knowledge of their peers. As Sirc and Reynolds note, collaborative technology not only helped the students they observed learn about “text as a formal object, they learned about the way texts are received in the world” (Sirc and Reynolds 67).

### *Social Act*

Similar to the collaborative nature of the use of technology in writing, is technology’s ability to convey writing as a social act or social process. The first way that technology can convey writing as a social act is through publication. Margit Watts and Megumi Taniguchi say that Web publication has the potential to increase motivation in students: “Studies have

repeatedly shown that when students write for an audience, they do some of their best writing and thinking: writing e-journals, participating in conversations and discussions on the MOO [Multi-user domain, Object Oriented], and posting messages for groups are all writing endeavors that require an audience” (Watts and Taniguchi 189). Mary O’Haver and Thomas O’Haver note a similar effect in students who publish work online: “It is clear that the students’ attitudes toward their work has changed when they become aware that their work will be read and used as a resource by others. This is an incentive to check their work carefully, to seek assistance from others for any suggestions, and to learn new techniques that may improve their presentation” (O’Haver and O’Haver 68). Krause also argues that publishing writing online produces greater results from students as they acknowledge their potential audience: “The possibility for a wider audience is created with Web publishing because the student-created Web page is no longer a ‘paper’ exchanged only between an individual student and an individual teacher; rather, a student-created Web page is a ‘published’ document accessible to the entire Web community” (Krause 119).

Additionally, research shows that Web publication can also influence how students perceive themselves as writers. O’Haver and O’Haver examine the use of Web technologies in the writing classroom and find that “these projects increase students’ motivation for writing and encourage them to think of themselves as producers and not just as consumers” (O’Haver and O’Haver 63). This distinction between producers and consumers is key, as it causes students to see that writing is indeed a social act and that, as writers, they are active participants in society. Krause expands on this idea:

The Web is an excellent way to publish student writing and to put students in direct contact with large and “real” audiences. I think it is a widely accepted

premise among writing teachers that the act of writing is a social process that changes dramatically depending on the demands of different rhetorical situations and audiences...Web publishing holds great promise for better realizing a dynamic and socially governed writing pedagogy in traditional educational institutions.

(Krause 118)

Others have noted the civic or social focus that technology-aided writing possesses (Smith 39-45, Watts and Taniguchi 187-204). Cheryl C. Smith discusses the democratizing potential of blogs, particularly for inexperienced writers:

Educational proponents of blogs see them as highly democratic forums for writing that highlight rather than elide the importance of the author and encourage interactive communication...As flexible, familiar platforms, blogs lend power to the author and may especially empower inexperienced writers who often feel uncomfortable with academic discourse but more at home with Internet writing. At the same time, the open-forum quality of blogs defines them as especially democratic, connecting authors with larger audiences engaged in vibrant, ongoing conversations” (Smith 40).

Watts and Taniguchi also note the positive effect technology can have on inexperienced writers as it allows them to experiment while also helping them see their writing as part of a greater dialogue. They write of technology: “It offers students new ways to be creative, bold, and innovative, charting for themselves that new frontier as they build the necessary skills to become productive members of their local communities and the emerging global village” (Watts and Taniguchi 204). Together, this research suggests that writing and publishing through digital technologies can transform a writing assignment into a real interaction with the audience, and

can transform the writing student into a more confident participant in both the writing community and in society.

### *Creativity*

In addition to these highly apparent benefits of using technology in writing instruction, are some less apparent benefits. One of these is technology's ability to foster creativity or play in writing education. Donald M. Murray describes the importance of play and circular, or invisible, thinking in the writing process (Murray 18). "This drifty-minded writing is essential to creativity," he writes. "I am looking for something worthy of exploration...Circular writing isn't just a technique for 'creative writing.' It is an underground river that flows before and during all writing" (Murray 18). Abundant research supports the idea that technology can aid in the creative process of writing (Chong and Lee 640-653; DeCosta, Clifton and Roen 17; Edwards-Groves 99-110; Fortune 145-154; Matthews-DeNatale 63; Tackvic 427-8; Watts and Taniguchi 200). Gail Matthews-DeNatale argues that the physical experience itself of writing via technology promotes creativity. She writes, "The experience of composing text on a computer is different from that of penning words by hand – the machine allows us to capture thoughts as they come to us, the nonlinear meanderings of the mind, and then cut and paste our ideas into a more linear and reasoned sequence of prose" (Matthews-DeNatale 63). Watts and Taniguchi describe similar effects through the use of e-journals: "There are three reasons why e-journals are able to synthesize and capitalize on the best elements of e-mail, journals, free writing, and brainstorming. These reasons have to do with unmediated thought, ungrammatical writing, and nonlinear thinking (Watts and Taniguchi 200). They expand on this idea:

Journals have long been heralded as excellent tools for increasing students' writing and critical thinking skills...In e-journals, students are not given limiting

prompts; they are given a blank computer screen to fill. Because no direct topics are provided, they are forced to find their own meaning. Students emerge as creative thinkers as this method provides an open mike for written expression.

(Watts and Taniguchi 201)

As Matthews DeNatale and Watts and Tanaguchi argue, the very experience of composing via technology fosters creativity and allows more opportunities for “play.”

In addition to more traditional technologies, such as e-journals and word processing software, technologies developed for the sole purpose of aiding creative writing also exist ( Chonh and Lee 653). Charlene Tackvic describes the use of one such technology, a Web site called Kerpoof, in teaching writing to elementary level students: “As the students were working on their stories, I asked them what made writing stories like this so much easier than using paper and pencil. I repeatedly got the same response: students loved having digital images to use when planning and writing. They weren’t staring at a blank piece of paper; they were looking at thousands of images – images that helped with the creative process” (Tackvic 427). While much research on creativity software or technologies focuses on younger children, Ron Fortune argues that the need for creativity in the writing process is just as important for secondary and higher education students. He writes, “What is lacking in the various discussions of the role of visual thinking in writing is an analysis of how drawing can and should play a role in the composing of adolescents and young adults in high school and college...the computer provides an excellent opportunity to develop such approaches because of its ability to blend visually and verbally oriented software” (Fortune 151-2). He further notes the specific advantages that creative or visual writing holds for students of these ages: “By developing visual abilities in conjunction with verbal, we may be providing students with a special means of extending their critical



thinking and writing abilities more efficiently and more effectively than is possible if we restrict writing instruction to verbal expression alone” (Fortune 160).

Christine Edward-Groves also notes that a focus on multimodality in the writing process is indicative of changes in literacy and pedagogy that technology has produced. She writes:

For many, writing is a dynamic multimodal process which provides a broad scope of possibilities for new social, new literacy and new pedagogical practices. These practices have enabled students in their everyday life and in their classrooms to become multimodal designers of text, as writing now requires multimodality, creativity, technological and technical complexity...and so for teachers, developing explicit understandings of these shifts in learning and literacy practices is a critical dimension to changing pedagogical practices” (Edwards-Groves 99-100).

According to Edward-Groves, the implementation of creativity or multimodality in writing instruction is not just beneficial to students, but is necessary as writing itself becomes more multimodal and hypertextual. Thus, in order to address the multimodal ways in which today’s students are actually writing, creativity and play must become a part of the writing process.

### *Classroom Culture*

A second less apparent benefit of using technology to teach writing is the idea that technology and computer-mediated classrooms (CMC) improve classroom culture. Research suggests that technology can create a more egalitarian environment for both diverse students and struggling or marginalized students (Bulik and Wulff 18-24; Condon 57-8; DeCosta, Clifton and Roen 19-20; Gay 147- 157; Gerrard 94-7; Murphy 243-4; Watts and Taniguchi 194-200). Pamela Gay writes of this egalitarian effect for diverse students: “Free from the gaze of the teacher and

many sets of eyes, students tend to be more honest...Computer-networked discussion de-faces (or levels) difference. A participant's gender, size, shape, age, color and accent are unknown" (Gay 147-8). Condon notes how a Web-based classroom may be particularly beneficial to female students:

Surveys all suggest that the virtual world is unfriendly to women. However, statistics from the class this chapter describes suggest that a virtual classroom is different from the kind of electronic space to which these surveys speak...The evidence, both in quantity and quality of participation, suggests that although males may dominate the more recreational online contexts, females more than hold their own when mixed groups are required to accomplish collaborative tasks in virtual space. (Condon 57-8).

In a similar vein as collaboration, Gay argues that technology can not only create a better environment for difference to be acknowledged in the writing classroom, but it can help students truly engage difference (Gay 152). She writes, "CMC makes it possible for all students to voice themselves and hear difference in ways not possible in a conventional classroom setting, but it takes more than CMC – it takes good theory in practice, or else the polylogue is ignored or stifling. In computer-networked discussions, students can more freely voice their differences and also 'hear' multiple voices, enabling them to see a wider angle of perspective" (Gay 157).

In addition to creating a more accepting environment for diversity, use of technology in the writing classroom can also help students who struggle academically feel more confident and involved (Wattas and Taniguchi 194). Watts and Taniguchi discuss the benefits of using email and e-journals to communicate in writing classrooms:

To engage students more actively in education, educators must offer them an opportunity to be heard; the very nature of the email encourages dialogue...email is less intimidating than face-to-face encounters. We have found that students are brutally honest in email messages and journals...Students will quickly admit their confusion and raise questions about what they are doing in class...email is one of the best sources of instant feedback. (Watts and Taniguchi 194-7)

DeCosta, Clifton and Roen note that the anonymity that many Web-based technologies offer can encourage shy or hesitant participants to become involved in discussions: “Social networking sites or discussion boards may be particularly useful for these students as they allow students to collaborate with others but relieve some of the pressure of face-to-face communication” (DeCosta, Clifton and Roen 19).

But despite these apparent benefits, others argue that CMC or Web-based technologies can actually create problems for marginalized or struggling learners (Bulik and Wulff 17, and Gerrard 94-7). Robert J. Bulik and Sherry Wulff – in a study of students who are at risk, learning disabled or emotionally disturbed – take “a critical look at the potential for technology to engage or further alienate marginalized learners by raising the question: If teachers only incorporate technology into the classroom but do not address the underlying literacy, should outcomes improve for these learners?” (Bulik and Wulff 17). In other words, Bulik and Wulff believe that the technology that could potentially help these marginalized students may cause more harm if they are not provided with adequate instruction on the technology. Lisa Gerrard also notes that technology can be either a benefit or detriment to marginalized or struggling students. She writes:

Basic writers...they are usually our most insecure and recalcitrant writers, with the least effective composing habits. These weaknesses make them especially likely to misinterpret the directives of poorly designed software or to fail to utilize the computer as an instructional tool. At the same time, the computer's capacity to invite experimentation, prewriting, revising, and collaboration – advantages for any writer – address several of the most pressing needs of this group. Depending on how they are used, computers, for good or ill, can transform the writing habits and attitudes of basic writers” (Gerrard 94).

However, like Bulik and Wulff, Gerrard also argues that the power resides within teachers to ensure that technology is used for the benefit of these students. Gerrard offers a similar warning to that of Bulik and Wulff:

When marginalized learners ‘cooperate’ with the constraints of very structured computer programs, there is the danger that they will be further de-skilled in terms of becoming self-directed, self-regulated, lifelong learners... We believe that teachers at all levels should be critically aware of the assumptions and constraints used to engage marginalized learners. Literacy should be a lifelong pursuit, aided in the next millennium by technology. (Bulik and Wulff 24)

Research on how technology can benefit classroom culture emphasizes an idea that is present in much of the research on the topic of technology and the writing classroom: technology alone will not benefit students; an understanding of how pedagogy and literacy are involved in and changed by technology is necessary to truly benefit students.

*Conclusion*

Indeed, the important role of the teacher is emphasized throughout much of the research on the uses of technology in writing instruction. Evidence shows that technology can enable collaboration, reveal writing as a social act, foster creativity, and create a more egalitarian classroom culture. However, the evidence also shows that technology cannot be employed for technology's sake. It must be incorporated into the curriculum in a way that increases student literacy and enhances writing pedagogy. For this reason, it is essential that teachers understand the possibilities, limits, and challenges of technology in the writing classroom. Berge articulates this idea: "We need to change the way we think about technology in our schools. Even though technology alone is not enough, it can be used to create learning environments that boost student achievement, improve student attitudes and self-concept, and enhance the quality of student-teacher relationships" (Berge 2). Through this examination of the research on both the possibilities and limitations of the use of technology in the writing classroom, it is hoped that a better understanding of how to proceed in incorporating technology into writing education is achieved.

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