PREPARING Teachers TO TEACH Writing USING Technology

Edited by
Kristine E. Pytash
Richard E. Ferdig
Timothy V. Rasinki

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http://tinyurl.com/writingtech

ISBN: 978-1-304-35185-2
Library of Congress Control Number: 2013949454

"I have much to write you, but I do not want to do so with pen and ink"

(3 John 1:13; NIV).

Acknowledgments

An edited book would not be possible without the contributions of authors. We would like to thank our authors for their hard work and dedication to the book. The authors deserve credit not only for their contributing chapters, but also for participating in a peer-review process in which they reviewed two blinded chapters. We truly appreciate their participation and willingness to be involved in this process. This helped guide the development of the book by providing thorough and specific feedback to their fellow authors. We also appreciate their attention to deadlines for initial chapters, reviews, and final submissions. Given the topic of our book and the rate at which technology changes, getting authors' work published quickly was a goal our authors helped us achieve. Their diligence allowed for rigorous deadlines and made it possible for us to submit the book for publication in a short amount of time.

We want to thank David Reinking for his willingness to provide the foreword for this book. David's work in literacy and technology has been and continues to be integral to researchers and practitioners in our field.

We would also like to thank Drew Davidson and his colleagues from ETC Press (Carnegie Mellon)for taking on this project. Drew brought a wealth of experience in publishing open-source content. He was always quick to respond to a phone call or email and guided us through this process. We appreciate Drew's attention to the details surrounding the publishing of this book. We also enjoyed meeting and getting to work with Shirley Yee who worked closely with us during the submission and publication process.

In closing, we wish to thank our families for their support of our professional efforts, allowing us to give up personal time to complete this task.

Kristine E. Pytash, Teaching, Learning and Curriculum Studies, Kent State University
Richard E. Ferdig, Research Center for Educational Technology, Kent State University
Timothy V. Rasinski, Teaching, Learning and Curriculum Studies, Kent State University

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Foreword

David Reinking
Clemson University

This book is an important signpost on an evolutionary—and revolutionary—pathway from a typographic to post-typographic world. Not that this book is needed to confirm the obvious: everyday literacy is well on its way to being predominantly digital. Any threshold of reasonable doubt about that outcome has already been crossed. For example, almost weekly, the Pew Internet in American Life Project (http://www.pewinternet.org/topics.asp?c=4) releases a new survey documenting new ways digital information and communication are being infused into diverse aspects of everyday life. Put more colloquially, few would consider newspapers to be a growth industry. However, the breadth and depth of these revolutionary changes typically recedes into the background when entering many schools, particularly in language arts classrooms where one might expect to see teachers and students engaged in the vanguard of dealing with and preparing for an increasingly post-typographic world.

The reasons that reading and writing in schools too often remain largely grounded in the typographic world are undoubtedly complex and nuanced. But apparently, it is not because language arts teachers, as a group, fail to recognize the importance of digital forms of communication or lack the desire to integrate those forms more into their teaching, let alone resist it, as some might contend. For example, in a national survey of K-12 literacy teachers conducted in collaboration with my colleague Amy Hutchison (Hutchison & Reinking, 2011), respondents reported strong support for integrating technology into their instruction. Specifically, they reported the extent to which they integrated 18 uses of technology in their teaching, including a subset of 6 items designated as 21st century literacy skills. Then, they rated their perceived importance of the same categories. For every category on an identical scale, perceived importance was ranked higher than reported use. And, in a separate analysis, beliefs about importance accounted for much of the variance in reported use.

Neither have the most influential professional organizations for language arts teachers ignored or been silent about the changing landscape of literacy and the implications of those changes for instruction. The International Reading Association (IRA) has published a position statement (http://www.reading.org/General/AboutIRA/PositionStatements/21stCenturyLiteracies.aspx) that states plainly, "To become fully literate in today's world, students must become proficient in the new literacies of 21st-century technologies." Similarly, the National Council of

Teachers of English (NCTE) has adopted four position statements, four sets of guidelines, and 11 resolutions pertaining to promoting digital literacy in the language arts (see www.ncte.org).

So, what is missing? Arguably one need is authentic examples of how digital literacy can be viably integrated into writing instruction and how teacher educators can better prepare teachers to do so. That is where this book enters the picture. It provides diverse examples of digital applications and activities from teachers and teacher educators. It is not armchair speculation. Its contributors are actively engaged in bridging the divide between the traditional content and activities of writing instruction and a literate world that is increasingly digital. Each chapter makes specific recommendations for those who wish to emulate and benefit from the authors' efforts to more closely align writing instruction with currently available digital tools and forms. Collectively, the chapters provide many concrete ideas and suggestions useful to practitioners at all levels. Refreshingly, several chapters are co-authored by or represent close collaborations between classroom-based and university-based colleagues. Many of the chapters also suggest avenues for researchers who wish to investigate how digital literacies can be incorporated into writing instruction.

The imperative for attending to the activities and applications in this book is not obviated by the fact that the overwhelming majority of students today are digital natives. Coming of age as a member of the Facebook and Twitter generation does not necessarily guarantee strategic and efficient use of such digital forms of reading and writing, especially in academic environments. For example, in a multi-year, federally funded project with my colleague Don Leu, we found ample evidence that middle-grade students were naïve and inefficient when using the Internet to locate, evaluate, synthesize, and communicate information for academic work (Leu, et al., 2007). Again, teachers apparently recognize the need to contend with such skills. In one of the aforementioned recent Pew surveys, 91% of the teachers surveyed identified judging the quality of information to be an essential skill students will need for the future (Purcell, Heaps, Buchanan, & Friedrich, 2013).

Further, there seems to be no inbred inclination for new teachers to 'go digital' in their instruction. In a recently completed dissertation, my doctoral student Jamie Colwell engaged pre-service social studies teachers in blogging with middle-school students who were reading primary and secondary historical texts in a state history class. Surprisingly, the pre-service teachers in an initial interview expressed doubt that they would use technology in their future instruction, an attitude that the blogging activity only partly mitigated. Likewise, in our aforementioned national survey of literacy teachers, we were surprised to find that older, more-experienced

teachers were integrating technology into instruction more often and somewhat more authentically than younger, less-experienced teachers. Thus, there is a continued need for books such as this one. We cannot assume that the digital juggernaut will automatically penetrate classrooms and instruction appropriately and effectively.

There are other aspects of this book that readers are likely to note and appreciate. The chapters cover the full spectrum of writing instruction, describing applications and activities aimed at students in K-12 classrooms as well as pre- and in-service teachers. They focus on diverse contexts (e.g., clinical settings) and learners (e.g., second-language learners) and address diverse purposes (e.g., academic and non-academic writing). There is an international perspective with contributors from the U.S., Australia, and Spain. Further, activities and applications range from those aimed at enhancing the conventional content and goals of writing instruction (e.g., note taking and writing essays), to those aimed at developing new skills, strategies, and dispositions associated with creating digital, often multi-media texts. Other activities and applications bridge those different realms (e.g., editing Wikipedia pages as a springboard to considering the reliability and authority of texts).

One aspect of this book deserves special note. It sidesteps the irony of many previous books that have extolled the opportunities and virtues of digital reading and writing, but that have been published as conventional printed books. Instead, this book will be made available electronically and freely accessible online under a creative commons license (see: http://creativecommons.org/ see also: http://www.sparc.arl.org/). Although the format and organization remains conventional without exploiting many of the affordances digital texts provide, it is a step in the right direction. The editors should be commended for seeking out electronic publication with open access, as should the publisher for making that option feasible. This approach is likely to extend considerably the reach of the book's authors and their contributions, as it has for authors who publish in online, open-access journals.

Beyond its potential contributions to inform and to enhance the practice of writing instruction, this book stands as a testimony to how far we have journeyed on a pathway from a typographic to a post-typographic world. Yet, it reaffirms that we have not completely freed ourselves from the past. As teachers, teacher educators, and researchers, we still struggle to interpret what it means to read, write, communicate, and access information digitally—a development that Alan Purves (1998) argued has been the third great revolution in writing after the invention of the alphabet and then the printing press. Coincidentally, this book will be published exactly 30 years after the editors of Time magazine broke with tradition, naming the

computer as the "Machine of the Year" in its annual selection of the "Person of the Year." It was a prescient and, in retrospect, justifiable choice. The editors could not have imagined the societal changes the computer would launch, and how central new forms of digital communication would be to those changes. But they must have had a sense that something monumental was afoot. For us too, it is difficult to imagine where we will be 30 years from now. Regardless, we need books like this one to add clarity and impetus to the journey.

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Preparing Teachers to Teach Writing Using Technology

Technology is changing not only how people write, but also how they learn to write. The landscape of writing and writing instruction has moved far beyond pen and paper. These profound changes require teachers to reconsider their pedagogical practices in the teaching of writing. Leu, Kinzer, Coiro, and Cammack (2004) posit that technology requires teachers "to be (a) aware of emerging technologies for information and communication, (b) capable of identifying the most important new literacies that each requires, and (c) proficient in knowing how to support their development in the classroom" (p. 1599).

These changes bring with them many important questions about technology, writing, and our future teachers. For instance:

- How do teacher educators effectively prepare teachers entering the profession and support teachers currently in the classroom to work with technology to facilitate writing instruction?
- How can teacher educators and those who lead professional development organizations help teachers stay updated with the latest technologies?
- How do teacher educators assist teachers in learning to implement instructional approaches that effectively integrate technology into the writing classroom and that contribute to students' growth as writers and users of technology?
- What are teachers learning about writing instruction from their own personal experiences with writing and writing instruction?

Researchers in our field are beginning to explore these important questions and are doing so by acknowledging the important and necessary connections between research, policy, and practice. There are two main goals of this book. First, we hope to extend the conversation that examines technology practices in teacher education around writing. This book is another step in establishing a corpus of research-based, practice literature surrounding the areas of teacher education, writing, and technology.

Our second goal relates to the format of this book. There is a tradition of publishing in academia. Whether the books and articles are purely research focused (empirical or theoretical) or have more of a practical bent, scholarly works typically find themselves in print journals or books. Online journals and e-books have now been accepted, but their early entrée were met with skepticism by the gatekeepers of academia. We have had the privilege and luxury in this

book of working with Drew Davidson from ETC Press (Carnegie Mellon). He brought experience in publishing open-source content. Essentially this book is free (unless one chooses to pay to print), which means that it has greater potential for immediate uptake and application worldwide. We are obviously not the first to do this--ETC press has a history of providing these types of books. The National Academies Press also has provided cutting edge content through this medium. However, we believe this is one of the first open-source books on the impact of writing and technology for teacher education.

We feel that this is important opportunity for us and our fellow writers, not because this was one of the first in this area, but because it was an experiment in the very topic we are writing about. In other words, publishing is part of the writing process and it is being redefined. Our students and our teachers now have access of new ways of obtaining and publishing material online. We believe it would be short-sighted to not understand the influence of these new opportunities on writing and on teacher education.

The Book's Writers and Audience

The chapters collected in this book were written by experienced teacher educators in the areas of writing, teacher education, and technology. We believe there are two reasons the book is timely and relevant for the field. First, we wanted the chapters to represent the current trends in the field of teacher education, writing, and technology. This was done by having an open call, rather than a call for chapter topics predetermined by us as editors. We believe the nature of this open call allows the book to represent what is currently happening in teacher education. Second, in order to strengthen the book, proposals were initially reviewed by the editors. Accepted proposals were then peer-reviewed by accepted authors and the editors. This process allowed reviewers to help strengthen others' chapters while at the same strengthening their own by receiving feedback and by viewing others' work. We were excited by the level of commitment on the part of the authors to provide their colleagues with constructive and detailed feedback.

The teacher educators who authored these chapters wrote about their current work and expertise. These authors highlight their experiences working directly with preservice teachers, in-service teachers, or those in professional development communities. The chapters provide snapshots across a broad spectrum of contexts (e.g. methods courses, K-12 schools, professional development communities) and with a variety of populations in teacher education (e.g. preservice teachers, in-service teachers, members of the National Writing Project). By sharing their pedagogical practices, these teacher educators provide insight into the instructional approaches

that are effective in preparing and developing teachers who will teach writing with technology.

We acknowledge that technology is rapidly changing. Therefore, the goal of this book is not to endorse specific technologies, but rather to explore how teacher educators are working with preservice and in-service teachers to highlight specific pedagogical practices effective in the teaching of writing with technology.

The obvious audience for this book are teacher educators. We hope that these chapters provide a meaningful resource for sustained professional development and reform-oriented practice. These chapters will also undoubtedly be useful for preservice teachers and in-service teachers. Finally, we hope that researchers will find this book useful. Although the chapters are written to inform practice, they are written from a theoretical and empirical base by research-oriented educators in our field. Researchers may find that the content of the book sets the stage for current and future research in teacher education, writing, and technology.

General Outline for Chapters

We feel readers will want to examine the field holistically, looking broadly at various instructional practices in teacher education. In order to do this, each chapter is structured in a similar manner so readers can analyze the practices across multiple contexts and with a variety of populations.

1. Vignette or other conversational introduction to the strategy. Each chapter begins with a vignette to demonstrate the specific need in the area of teacher education, writing, and technology.
2. Overview, purpose, and research base for the strategy. In this section authors provide the research base for the particular instructional approach that will be discussed in the chapter.
3. How do I do it? The authors provide an enumerative description of their strategy or the instructional approach.
4. Extensions. The authors discuss how to take the strategy to another, more complex level or elaborate on how to address the needs of particular populations of students.
5. Example(s) from classrooms and/or other instructional settings. Specific examples from the authors' work are presented that highlight how the pedagogical practice advanced the knowledge of the teachers in the areas of writing instruction and technology.
6. Your Turn. Here the chapter authors invite readers to explore how they might

adapt the particular pedagogical practice (e.g. preparation and implementation) for their own instructional communities.

7. References. Each chapter concludes with references for further reading.

Book Layout

While we know readers will appreciate looking across contexts and participants, we also recognize that a preservice teacher in a methods course might have different learning needs than a veteran teacher who has participated in the National Writing Project. Therefore, we have divided the book into sections based on the population of teachers and the context of the work featured in the chapter.

- *Preservice Teacher Methods Courses*
  Preservice teachers are just beginning their careers as teachers. While current preservice teachers may be considered, "digital natives" (Prensky, 2004) there is a danger in assuming they will automatically be able to teach writing effectively with technology. How do teacher educators prepare preservice teachers to go into their first years of teaching ready to understand the complexities of teaching writing and how technology can be integrated effectively into their instructional practices?

- *In-service Teacher Methods Courses*
  In-service teachers in writing methods courses are returning to the university setting with a wealth of knowledge from their years in their classrooms. How can teacher educators effectively bridge the new knowledge of effective pedagogical practices with teachers' current understandings of and practice in writing instruction?

- *Working with Teachers in the K-12 Setting*
  How do teacher educators create engaging professional development opportunities that assist teachers in learning about effective writing instruction with technology. What are the needs of these teachers? What are the most effective ways to make sure teachers develop a sound understanding of how technology can be used and integrated into the writing classroom? What support do they need?

- *Beyond Professional Development*
  The National Writing Project is well-known for its effective professional development opportunities for teachers. But what happens after teachers complete the

NWP institute? How do they implement this new knowledge into their current practices? How can leaders of NWP continue to collaborate and support the teachers who they have worked with?

- *Composition Coursework*
  Composition courses are a staple to every university's core curriculum. Teachers are students in these composition courses. Lortie (1975) explains that teachers' beliefs are influenced from years of apprenticeship of observation. The ways that teachers receive writing instruction as students influences their beliefs about how writing should be taught. What instructional practices are happening in university settings that might influence what future teachers learn about writing and writing instruction?

Conclusion

We proudly present this collected volume as a way to support the recognition of the importance of preparing teachers to teach writing using technology. We believe teacher educators doing work in this area will have an opportunity to explore pedagogical practices effective in the teaching of writing using technology. We hope readers can examine the sections and read the chapters with particular attention to the specific context and population of teachers, but then also look holistically at the lessons learned from the collective work. We hope teacher educators will find new insights to improve their instruction. Having an up-to-date understanding of teacher educators' pedagogical practices can provide the field with an in-depth examination of current trends and effective instructional approaches. We believe there is potential in continuing a book of this nature in years to come. This would provide a reflection for past and current work being done and could potentially shape future work.

Respectfully,

Kristine E. Pytash, Teaching, Learning and Curriculum Studies, Kent State University
Richard E. Ferdig, Research Center for Educational Technology, Kent State University
Timothy V. Rasinski, Teaching, Learning and Curriculum Studies, Kent State University

April 30, 2013

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Preservice Teacher Methods Courses

Chapter 1

Exploring Multimodal Composing Processes with Pre-Service Teachers

Ryan M. Rish
Kennesaw State University, USA

"Do they have to be the same?" The pre-service teacher asking this question was wondering if the essay she had written had to be the same, word for word, as the digital multimodal composition (DMC) she was creating. Similar to the way I used to ask my high school students, I had asked my pre-service teachers enrolled in a technology and digital media class first to write a This I Believe essay (National Public Radio) and second to create a DMC using the essay. The written essay involved writing about something in which you believe in 350-500 words and uploading it to the This I Believe website. The DMC involved combining an audio recording of the essay with moving and still images, music, video, and/or other media effects using video editing software. The purpose of writing the essay and creating the DMC was to have the pre-service teachers consider the affordances and constraints of different combinations of modes for conveying meaning to intended audiences.

"Well, no. I guess they don't have to me the same. What do you have in mind?" I responded to the pre-service teacher. She explained that she wanted to rewrite parts of the essay so they were more appropriate for the audio recording and the other media she was incorporating in her DMC. I asked her if the other media she was incorporating (i.e., music, images, transitions) was shaping or even redefining the intended meaning of her written essay, and she said that it was. At certain points in her DMC, she wanted to rewrite the essay she was using for her audio track to accommodate the other media she was incorporating, instead of only finding media that was commensurate with the way the essay was written. The result of her DMC composing process was a slightly different articulation of her beliefs than her original written essay.

"Can I upload a new written essay to This I Believe?" she asked. Again, I asked her what she had in mind. After the pre-service teacher had revised her writing for the DMC audio track, she was no longer happy with the original, written essay she had uploaded to This I Believe. The processes of rewriting and recording the audio track of the essay, selecting the other media for the DMC, and putting it together using video editing software helped her rethink the writ-

ten essay in ways that made it more representative of her beliefs and the meaning she had set out to convey to her intended audiences. The writing and rewriting of the essay had shaped the composing of the DMC, but the composing of the DMC had also shaped the written essay. When I asked the rest of the class about their composing process, some of them also reported rewriting their essays for the DMC. Others reported that they did not, but most of the class agreed that they would have written the essay differently had they known about the DMC part of the project in advance. Clearly, the linear steps from writing the essay to audio recording the writing to creating the DMC did not allow for the multiple possible ways the pre-service teachers could make meaning with different assemblages of modes.

Even though as a writer, a teacher of writing, and an instructor of writing pedagogy I knew that the composing process is neither linear nor procedural, I had established the This I Believe project to begin with writing and end with a multimodal composition. The pre-service teacher's questioning of this linearity changed the way I approached this project with my future technology and digital media classes. Rather than suggest a particular procedure for composing the written essay and the DMC, I became more interested in supporting pre-service teachers in the exploration of their own and each other's multiple processes of composing. I now want the pre-service teachers to consider that we do not have to consider print as the primary or dominant mode. Rather we can consider how multiple processes of combining modes into different assemblages help us make decisions about the most appropriate ways to convey meaning in particular contexts and in relationship to particular interpretive communities (Fish, 1980).

Considering Multimodal Composition as Remediation

Before considering with what composing processes and with what assemblages of modes people make meaning, we must first consider a broader set of questions. Invariably, one of my pre-service teachers will ask me why we should even explore multimodal composition with students if schools are primarily concerned with print-based literacy practices. This is an excellent question and should not be brushed away with a cursory advocacy for *new literacies*. Rather, we address this question by considering the narrow range of opportunities for students to make meaning within school when they are limited to print-based literacy practices that are increasingly oriented to written genres sanctioned by standards and standardized tests. We then consider how composing in multiple modes for multiple purposes potentially may provide opportunities for students to make meaning and enact literacy practices in relationship to interpretive communities not typically associated with school (Street & Street, 1991), as with the This I Believe DMC. These considerations help the pre-service teachers think about what students are setting out to accomplish when making meaning, with what modes, with whom,

for whom, when, where, how, and with what social consequences? (Newell, Rish, & Bloome, 2009). Questions like these help us understand the social contexts in which, and the literacy practices with which, students are constructing meaning in the first place.

I have found Leander's (2009) four stances toward *new literacies* to be a productive place to start when helping pre-service teachers understand possible ways educators and parents may approach these questions.

> 1. *Resistance.* The first stance is *resistance*; this stance considers writing and reading print to be of primary importance for students. Resistance to considerations of multimodal composition may be a result of an allegiance to conventional and historical school-based reading and writing, but it can also be a practical reaction in the face of standards and high-stakes assessments that privilege print.
> *2. Replacement.* The second stance is the exact opposite of the first. The *replacement* stance seeks to engage students in composing and comprehending texts they are likely to encounter in their present and future lives outside of school. The *replacement* stance is often characterized as intentionally disruptive of school-sanctioned contexts, in which non-print literacy practices (and the people who enact them) are marginalized.
> 3. *Return.* The third stance is a kind of middle ground between the first two. The *return* stances values non-print literacy practices like multimodal composition only to the extent that they support and/or can be justified with print-based literacy practices. A teacher working from this stance may have students produce written commentary about their multimodal composition in an effort to justify the DMC's value and/or consider multimodal composition as an intermediate step in developing print-based literacy practices.
> *4. Remediation.* The fourth stance is a departure from the other three. This stance is agnostic in regard to which modes are of primary importance and instead is concerned with considering which combination of modes are the most effective for conveying meaning to a given interpretive community. This stance acknowledges that meaning is rarely conveyed with a single mode.

These four stances serve as a heuristic for pre-service teachers to begin thinking about their own stance and the stances of teachers with whom they work alongside. I argue that the *remediation* stance allows us to consider students' meaning making without privileging print-based literacy practices or the idealized ethos of *new literacies.* From a *remediation* stance, we can consider the extent to which all meaning making involves an assemblage of modes shaped by

the literacy practices of the author in relationship to the interpretive community in which the meaning is conveyed.

A *remediation* stance also provides a lens through which pre-service teachers can consider the extent to which their teaching will be informed by standards like the Common Core State Standards (CCSS) and curriculum maps, teaching materials, and standardized assessments like the ones being sold to states by PARCC and Smarter Balanced. The *remediation* stance potentially supports teachers in raising concerns about how print-based literacy practices can be potentially privileged and literacy practices mediated by a combination of other modes can be potentially marginalized. This stance also helps pre-service teachers call into question why written genres are artificially segregated into categories in English language arts CCSS, i.e., argumentative, informational/ explanatory, and narrative, and how projects like a multi-genre project (Romano, 1995; 2000) and/or a multimodal project like the This I Believe DMC disrupt these artificial boundaries in productive ways for students.

Commensurate with Leander's (2012) *remediation* stance, Prior and Hengst (2010) use the term *semiotic remediation practices* to refer to not only the ways that any activity involves "taking up the materials at hand, putting them to present use, and thereby producing altered conditions for future action," but also to describe how people engage in activity that is situated in social contexts and practices (p. 1). Creating a multimodal composition like the pre-service teacher's DMC not only involves creating new artifacts to articulate her beliefs, but the composing process also involves engagement in the social practices and contexts of taking a college course, becoming a teacher, getting to know unfamiliar classmates, and so on. The multimodal compositions are shaped not only by the media assembled and the tools used to do so, but also the composer's history with similar composing activities and relationships to the people, places, and discourses involved. Therefore, a *remediation* stance involves (re)considering what our students are setting out to accomplish when making meaning, with what, with whom, for whom, when, where, how, and with what social consequences, each and every time we engage them in any act of composing.

Below, I take up a *remediation* stance to explain a way of exploring multimodal composing with pre-service teachers. I do so in consideration of the immediate social context of my class of pre-service teachers, the broader context in which the essays and DMCs were distributed and shared, and the multiple literacy practices they brought to bear on the multimodal composing process.

Setting Up and Supporting the Exploration

Over the years of teaching high school students and pre-service teachers, I have found the This I Believe essay to be a fruitful way to explore multimodal composing processes. The essay guidelines on the This I Believe website ask people to tell a story, to be brief, to name your belief, to be positive, and to be personal (This I Believe). The current This I Believe essay project is based on Edward R. Murrow's radio series of the same name in the 1950s. The archive of essays on the website includes the essays recorded and broadcasted between 1951 and 1954, as well as essays accepted for posting on the website and/or audio recording for airing on public radio, from 2004 to the present. I have also found that creating This I Believe DMCs is a popular assignment in high school and college classrooms; a YouTube search for variations of "this I believe essay" or "this I believe assignment" results in many DMCs, including my current and former students. The essay archive on the This I Believe website and the DMCs found elsewhere online serve as a wealth of mentor texts for students and teachers to consider.

With very few exceptions, students and teachers respond to this prompt with very personal written essays and DMCs. Because I ask the pre-service teachers to upload their essays to the This I Believe website and give them the option to share their DMC with the class by posting their videos online (e.g., YouTube, Vimeo), I ask them to consider the real and imagined audiences for the written essay and the DMC. I also share the history of the This I Believe project to contextualize the conversation about beliefs, in which I ask them to take part. Additionally, I introduce the This I Believe composing project at the beginning of the course to help define and establish the interpretive community of our class. I have found that the sharing of the DMCs in class helps to create relationships among the pre-service teachers who do not know each other well at this point in their teacher education program. Lastly, the prompt calls for 350-500 words, which typically results in a 3-5 minute DMC. I have found this to be a manageable length/size for what is often pre-service teachers' first multimodal composing project.

Investigating Affordances and Constraints

The first step toward engaging in this multimodal composition project is to help pre-service teachers begin to construct a way of talking (i.e., meta-language) about composing and comprehending meaning in multiple modes. Pre-service teachers often not only lack experience with creating and analyzing multimodal texts (Kress, 2000), but also benefit from constructing a meta-language for discussing multimodality about their own multimodal composing to inform how they will support their future students (Jewitt, 2008). We borrow terminology from the course text (Jones & Hafner, 2012) and other sources, such as MODE's (2012) multimodal glossary. However, I emphasize to my pre-service teachers that the meta-language we use

is meant to help explore how different assemblages of modes can be used to convey meaning with a given interpretive community, rather than a formal grammar to be used prescriptively or learned for its own sake (Bruce, 2012).

To begin constructing this meta-language, I ask pre-service teachers to consider three types of This I Believe compositions in class. First, we listen to an audio recording of Jackie Robinson's (1952) "Free Minds and Hearts at Work" on the This I Believe website. I ask the pre-service teachers to close their eyes and listen to Jackie Robinson speaking. Though most pre-service teachers know who Jackie Robinson is, this is often the first time they have heard his voice. Second, I ask them to select a written This I Believe essay from the archive of over ten thousand essays organized by theme on the website. The pre-service teachers read one of the essays silently. We then have a brief discussion about what is similar and different about the experience of listening to an essay and reading an essay. We consider the historical social context in which Jackie Robinson was recording and broadcasting his essay, and we consider what the social contexts in which the found essays from the archive were written. At this point, I suggest that we refer to audio and writing as different *modes* for conveying meaning, each with different *affordances* and *constraints.*

At this point, the pre-service teachers in this class have read the Jones and Hafner's (2012) first chapter, Mediated Me, wherein they are first introduced to the terms: *mediation, affordance,* and *constraint.* We begin to operationalize these terms by considering how the affordances of an audio recording (e.g., intonation, pauses, other sounds) mediates meaning in a way that is different than the affordances of a written essay (e.g., capitalization, punctuation, other text features). Likewise, we consider how the constraints of audio (e.g., linearity, pacing) also mediate what meaning is possible in ways that are different than the constraints of a written essay (e.g., voice rendering, fidelity to written language conventions). However, I also point out as others have (Oliver, 2005) that affordances and constraints are not a direct result of the materiality of the modes being used. Rather, in addition to its materiality, the perceived affordance of a mode is also shaped by how it has been used over time to construct meaning and by the social practices and contexts that inform its use. I am quick to point out that modes do not determine what meaning is possible and that we can exercise our agency to use modes in ways they have not been used previously.

A good example of this is the jump cut used in video and DMC production. Historically, a jump cut was considered to be a mistake in film production to be avoided. More recently, jump cuts are used intentionally to mark a moment of discontinuity and to achieve other temporal effects. For example, in the Stanley Kubric's movie 2001: A Space Odyssey, the opening

scene of a bone throw in the air jump cuts to a scene of the spaceship floating in space, marking an abrupt passage of millions of years. However, due to the overuse of the jump cut by video bloggers as a quick and efficient way to stitch together multiple takes, there is currently a backlash against using and overusing the jump cut, (e.g., DoomBoxRL, 2011). Therefore, though the jump cut has affordances associated with the materiality of abruptly transitioning from slightly different camera angles or subject positions, how this affordance has been perceived has changed from a mistake in film production, to an intentional effect, to a marker of lazy or amateur video production. The social and literacy practices that inform how the jump cut is used and how interpretive communities take it up shape the meaning that is conveyed as the materiality of the jump cut.

Next, we simultaneously read and listen to T. Susan Chang's (2012) "The Imperfect Traces Left by Human Hands." The pre-service teachers are quick to point out that the reading of the written essay while listening to the audio recording results in an unpleasant experience. Some report that Chang spoke too slowly for their reading speed, others report that they read ahead and tuned out Chang's voice, and a few often report that their reading was enhanced by Chang's audio recording. This experience demonstrates two considerations for people to make when creating multimodal composition. The first is what our class often referred to as *modal confusion.* Certain combination of modes may be disruptive to the intended meaning. This is often the case when modes are assembled in ways that are unfamiliar to or inappropriate for the intended audience or interpretive community. The second consideration is that just because a mode, or a certain assemblage of modes, is present does not mean that the audience will necessarily take it up. Jones and Hafner (2012) use the term *attention structure* to refer to the durable patterns people use to foreground certain modes and background others in any social or text-mediated interaction. A good example of this is video games wherein players foreground the elements that are immediately relevant and background elements that are not. Because every interaction with people and texts is multimodal, we use *attention structures* to decide what modes are most relevant at any given time. This discussion helps pre-service teachers understand that *modal confusion* is not only a result of inappropriate design decisions, but also a result of a mismatch between the assemblage of modes that convey meaning and the *attention structure* brought to bear by people interpreting that meaning.

Lastly, we consider two This I Believe DMCs created by pre-service teachers formerly enrolled in the class. The first is Kiyoko Demings' (2012) "Words Hold Power," and the second is Marjorie Foley's (2012) "These Hands." We consider how the assemblage of modes conveys meaning in each. In particular, pre-service teachers discuss the affordances and constraints of adding

a music track, noting how music establishes mood in Kiyoko's DMC and the absence of music in Marjorie's allows her spoken words to have more primacy. Not all of the pre-service teachers agree about each other's interpretations, and we use these differences to discuss how we bring different *attention structures* to the DMCs to interpret meaning. We also note how the *attention structures* are shared socially and shaped culturally.

Identifying Rhetorical Moves and Design Decisions

At the end of this activity, I ask the pre-service teachers to identify their own This I Believe written and DMC mentor texts and to provide a brief analysis using the metalangauge about multimodality that we constructed together. I ask them to identify mentor texts that they either like or do not like and explain why in their analysis. In particular, we look for particular *rhetorical moves* in the written essays and particular design decisions in the DMCs that we want to work with or make sure we do not replicate. Example *rhetorical moves* have included the stating and restating of the belief statement compared to gradually leading up to the belief statement at the end. Example *design decisions* have included the use of instrumental music that does not detract from the spoken words compared to a popular song with sung lyrics that can be tuned out due to its familiarity with the intended audience. We then share these mentor texts and analyses by compiling a Google document with links to the written essays and DMCs along with the brief written analyses. We indicate where we agree and where we do not; acknowledging that there is no definitive analysis or interpretation of any of the mentor texts and that the mentor texts are potentially taken up differently across interpretive communities.

I also upload two DMCs to VoiceThread and ask the pre-service teachers to make audio or video comments about the rhetorical moves and design decisions in one of the two DMCs. I do so to demonstrate that we do not have to always return to print for our analytical and interpretive work, as is the case with Leander's (2012) *return* stance. Rather, our analysis and interpretations can be mediated by audio and video more characteristic with the *remediation* stance; though, VoiceThread does also allow for written comments, for which many pre-service teachers opt.

Documenting Multimodal Composition Processes

After constructing a metalangauge to talk about multimodal composition and putting it to use to identify and analyze written and DMC mentor texts, I inform the pre-service teachers that they will be composing one of each. However, I explain that they get to decide how they go about creating each. I share that some people may want to begin with writing, but others may want to begin with selecting images or music for their DMC. We discuss how the writing of

the essay for submitting to the This I Believe website is a different rhetorical/composing situation than creating a DMC for sharing with me and/or the class. We also discuss how the two composing processes could be related and may even overlap. It is at this point that I often get asked the question, "Do they have to be the same?" I share my story of the pre-service teacher who first asked me this question, and then I ask them to consider how and why the written essay and the DMC should be similar and different in regard to how we have been talking about multimodal composition and interpretive communities.

I also ask the pre-service teachers to document their composing process. Though perhaps characteristic of a *return* stance, I have found that documenting composing processes in writing on a shared set of Google docs not only allows the pre-service teachers to create a record of their activities and decisions when composing, but also makes their composing process visible and accessible to others in class. They quickly realize that there is no one correct way to go about composing and that the composing process is anything but a linear move from print to multiple modes. The pre-service teachers are often surprised by how design decisions in the DMC inform rhetorical moves made in the written essay and vice versa. (See the online repository for example composing logs.)

Extension: Considering Double Exposure

An important extension of the metalanguage used to describe multimodal composition is Albers (2011) term *double exposure*. Though the term double exposure comes from photography to describe when two images are merged into a single image, Albers uses the term to refer to the choices we make when *remediating* images in multimodal composition in order to convey a message or generate a response from our audience. When people compose DMCs, they may create original images for their composition, they may *remediate* found images with the juxtaposition of other modes, and they may modify found images with photo editing software. Sometimes these images are the pre-service teachers own personal pictures, but most often these images are found online though image searches and photo sharing sites. We draw on the Center for Social Media's (2008) guide for fair use in media literacy education and the Creative Commons license types to consider use and modification within our discussion of *remediation*. When people *remediate* found images (use and/or modify), Albers explains that there is a two-fold tension at work:

1. On one hand, *remediating* images involves incorporating someone else's representation of an issue, and
2. On the other hand, *remediation* involves superimposing new meaning on found

images when incorporating into a DMC wherein other modes and effects are juxtaposed or laminated.

To explore the first tension with pre-service teachers, I find it useful to demonstrate how social issues are represented differently by images. A Google image search for the word 'poverty' will reveal comparable images of primarily children of color in abject conditions. The images are framed in a comparable manner featuring outstretched hands and looks of desperation directed toward the camera or at a person not in the picture. Though these images are of people situated in conditions of poverty, they are someone else's representation of the issue of poverty and not necessarily of the people represented. A second Google image search for the word 'working poor' reveals a different representation of the issue of poverty. The term itself is ideologically framed by how 'work' and 'poverty' are defined relative to the social and political context in which the term is used. The images that result from this search feature people in their workplaces, which are often framed as undesirable by the photographer. When we incorporate found images in our DMCs, we are working with the image creator's representation of an issue. To a certain extent, we can remediate that found image (even modifying it with photo editing software), but the vestiges of the original framing of the issue remain.

To explore the second tension with pre-service teachers, I share an example from my experiences as a high school English teacher facilitating a human rights project that culminated with a public service announcement in the form of a DMC. A group of my high school students was working on the issue of human trafficking in Thailand. They were frustrated by the lack of images available related to the human rights violation, so they expanded their search to find pictures they could *remediate* in their DMC. When I saw them using an image of a white child in their DMC, I asked them if the child was Thai. The students in the group said no; they had done an image search for 'sad children' and chose an image they thought best represented the human trafficking of children. To demonstrate this to my pre-service teachers, I do a Google image search for 'sad children' in class. They are surprised at how easily one of these pictures could be used to represent an issue impacting children. This exercise helps pre-service teachers understand the complexities with superimposing meaning on found images. We follow up with a discussion of the tensions of double exposure in the DMC mentor texts they identified.

Multiple Composing Processes

The pre-service teachers who documented their composing process the most recent time I taught the course were surprised by the various ways each of them wrote their essay and

composed their DMC. Out of 25 pre-service teachers enrolled in the Spring 2013 section of the class, eight followed what I describe as a linear path from essay to DMC, eight wrote and composed with primary concern for the DMC, three followed what I describe as a reciprocal composing process and six kept partial or incomplete process logs. Below, I elaborate on these multiple composing processes.

Linear Path from Writing to DMC

Eight of the pre-service teachers composed with the linear trajectory from writing to multimodal composition that I had imposed on my classes before opening up the project to a parallel composing process (Leander, 2012). These pre-service teachers first wrote their This I Believe essay, then audio recorded their reading of the essay, and lastly selected other media to complement the audio recording and assemble the DMC. For these pre-service teachers, the written essay and the audio recording were almost the same, word for word. The DMC became a *remediation* of the written essay. Some of these pre-service teachers were pleased with the DMC they created, but others expressed frustration with not being able to find the most appropriate media to complement the meaning of their written essay. For these eight pre-service teachers, the written essay was the primary text, and the DMC served as a derivation.

Process	Linear Path from Writing to DMC	Working Toward DMC	Reciprocal Composing
Description	1. Write essay 2. Record audio. 3. Select complementary media 4. Compose DMC	1. Consider and select media 2. Write complementary essay 3. Record audio 4. Compose DMC	Multiple drafts and revisions of both essay and DMC

Working Toward the DMC

Another group of eight pre-service teachers composed with a primary concern for assembling the DMC. Several of them began their process by looking through pictures of their own or found online, listening to music, and considering other This I Believe DMCs. One of the pre-service teachers began with an idea of what belief he was going to share and used the online music service Pandora to discover instrumental music that conveyed the tone he wanted to achieve in his DMC. He was very intentional about how the music would *mediate* the statement of his beliefs. Another of the pre-service teachers was so focused on the DMC she wanted to create that she found the writing of the essay difficult because she wanted the words she was choosing to match images she wanted to use. Once she found and decided on the images, she found the essay much easier to write and audio record. Finding the right pictures helped

her select the most appropriate words to *remediate* those pictures. A third pre-service teacher composed a DMC about a very personal incident in her life. She began her composing process by first thinking about how she was going to represent this incident and her beliefs with pictures. She began composing her DMC using the video editing software, adding pictures and music. After this process was complete, she wrote her essay to complement the DMC. In this way, the DMC provided the framework for the composition, and the writing and audio recording of the essay were the last steps in her process. For these eight pre-service teachers, the DMC was the primary text, and the essay was written to complement the selected images, music, and transitions.

Reciprocal Composing Process

Three of the pre-service teachers forged a more circuitous composing trajectory that involved multiple revisions of both the written essay and the DMC. For these three teachers, the processes of writing and rewriting of the essay and the multiple attempts at composing the DMC informed one another. One of the pre-service teachers found this reciprocal composing process to be a departure from previous ways she had composed. She wrote in her log:

> This is by far the weirdest way I've ever written an essay. The process of writing and putting together my video has not been linear at all. It's been a lot of videoing some, then writing some, then changing lines based on the video, and vice versa.

At the end of her process, though written paragraphs corresponded neatly with her video clips, she reported feeling so disoriented that some of her intended meaning was lost along the way. She felt she had made too many compromises to accommodate the technical aspects of composing a written essay that aligned with multimodal elements.

Another of the pre-service teachers in this group, found himself not only editing his essay to accommodate the multimodal elements, but he also adlibbed the audio recording of the essay, making changes as he was recording himself. Though, most of the pre-service teachers who changed their essay for their DMC reported doing so by first rewriting and then (re)recording, this pre-service teacher made changes extemporaneously to complement the images he had selected for the DMC.

The third student in this group considered how the *affordances* of written language conveyed meaning differently than the *affordances* of multimodal elements, such as images. She reported writing more descriptively in her essay in the absence of images and writing less descriptively

in the presence of images. She explained that using less verbal description when the image tells the story was a way she *remediated* her essay in her DMC. She also incorporated pauses of audio silence in her DMC to allow her audience to focus on particular images in the absence of her spoken words. For this pre-service teacher, the absence of multimodal elements shaped her written essay and the presence of multimodal elements shaped her DMC. The two composing processes were related in this way.

Working with Pre-Service Teachers

The ultimate purpose of this approach to exploring multimodal composing processes is to help pre-service teachers conceptualize how taking up a *remediation* stance opens up more possibilities for students to make meaning and can potentially shift who and what literacy practices are of value in a given interpretive community. I go so far as to suggest that a *remediation* stance can potentially open up new opportunities for students whose literacy practices have been historically marginalized in school by allowing them to demonstrate the ways they can draw on different modes to make meaning. In this way, a *remediation* stance is not merely a pedagogical stance but also a political one in the face of standards and assessments that determine the value of students, schools, communities, and potentially teachers based on a narrow set of print-based, school-sanctioned literacy practices (Street & Street, 1991).

However, this work with pre-service teachers is met with a number of challenges and obstacles for which we can prepare them to circumvent. For some pre-service teachers, a *remediation* stance involves disrupting the very print-based, school-sanctioned literacy practices that helped define them as successful students of English language arts. I ask the pre-service teachers to consider what intersections of difference are and are not represented by people who consider themselves successful students of English language arts—the middle and high school students enrolled in advanced English classes and the teachers preparing to teach or actively teaching English language arts. Further, I ask them to consider how broadening the range of ways of making meaning in English language arts can potentially broaden the range of people represented in advanced classes and in the profession of teaching English.

Pre-service teachers may also not have difficulty taking up a *remediation* stance because they do not have many representations of teaching practice (Grossman, 2011) in their own experience as middle and high school students and in their field experiences that operationalize this stance (Lortie, 1975). The lack of representations calls for not only more modeling of teaching practices informed by this stance, but also using the *remediation* stance to consider how existing teaching practices can be broadened and to question the extent to which any teaching practice

privileges certain print-based literacy practices and marginalizes other possible multimodal literacy practices that may be brought to bear by students. For the pre-service teachers who experience the tension within the *return* stance that demands justification for doing this multimodal work in ways validated by school, I ask them to consider how we can engage in a both/and approach rather than an either/or approach to composing (Miller & McVee, 2012). The *remediation* stance is not antagonistic toward print-based literacy practices; rather the remediation stance raises the question: to what extent is a myopic focus on written language in English language arts classrooms constraining what meaning students are making, with and for whom, when, when, where, how, and with what social consequences?

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Chapter 2

Developing Preservice Teachers for 21st Century Teaching: Inquiry, the Multigenre Research Paper, and Technology

Carol Wickstrom
University of North Texas, USA

What accommodations do we have to make for English Language Learners when teaching writing?

ELLs struggle, as it is not fully knowing English [sic] so they need to have as much help and support as possible from their teachers and peers. In my PDS kindergarten class there is one student who is fluent in Spanish and struggles with English so my teacher always pairs him with another student to work with so he can better understand things. I wonder what other things the teacher can do to help him fully understand.

Maggie

What motivational factors can be used to encourage students to enjoy writing? process?

Writing is a task that many of my students have differing opinions on; some love it, while others hate it. I would like to investigate the reasoning behind students' differing views of writing, hopefully discovering motivational factors that contribute to the enjoyment of the writing process.

Mandy

How can writing be incorporated across all subjects in a classroom?

I want to know specifically how I can make writing a part of every subject in an integrated class. I see in my classroom that there is a large push for writing, but students seem reluctant to use strategies they learn in writing while writing in other subjects. Students need to see writing as a skill that they can use, not as a subject in school.

Carrie

The questions and comments at the beginning of this chapter are representative of the variety and quality of questions that my preservice teachers have researched as a result of the inquiry project in my language arts methods class. To help them find these questions, I follow Romano's (1995) model of prewriting. Like Romano's students, we brainstorm possible questions about the teaching of writing as a class. Then, they spend several minutes writing about a question. Because I want them to see this project as more than a school assignment, I encourage them to connect their question to the writing they see happening (or not happening) in the

classroom in which they are an intern. Through this process they find questions that connect them to something that they are passionate about learning. In this chapter I present my use of inquiry, the multigenre research paper, and technology with preservice teachers in an attempt to make their work in my language arts methods class similar to the work they will do in their future classrooms.

Overview and purpose

As a teacher educator, I often hear students complain that none of the content of their education courses relates to what is happening in schools. They describe the work in their classes as impractical and a waste of time. Moreover, researchers (Britzman, 1991; Lortie, 1975) have reported that teachers teach in the manner in which they have been taught. Because of these factors and because I spent twenty-five years teaching in grades one through six, I understand the importance of incorporating effective teaching applications in my literacy course that are as "real" as possible. So, using a constructivist theory base (e. g., Bruner, 1963; Dewey, 1997; Vygotsky, 1978), I model effective strategies hoping that the students will view these strategies as appropriate for their teaching. Moreover, I believe that using inquiry, multigenre, and technology support the constructivist approach to teaching and have the potential to impact preservice teachers' current knowledge and beliefs about teaching.

Today, more and more districts require teachers to develop curriculum units based on the "big question." Developing big questions at the beginning of a unit of study, guides teaching because the planning focuses on what the students will learn as a result. Further, Wiggins and McTighe (2005) encourage teachers to start their planning with the end in mind so that desired results are identified from the beginning. Inquiry (e. g., Burke, 2010; Wells, 1994; Wilhelm, 2007), an important element of constructivism, supports the notion of identifying a question that will focus learning. Whether the question is centered on the learning of the group or the learning of an individual, inquiry requires a time of focusing a question, gathering information, sorting through the information, identifying how that information resonates with what is currently known, and finally determining what might be done next with the information. The inquiry process mirrors problem-solving and critical thinking. It invites students into the process of lifelong learning and thinking. In the 21st century, we need teachers who promote the use of inquiry so that we are developing problem-solvers and critical thinkers.

When inquiry is coupled with the multigenre research paper (Allen, 2001; Romano, 1995), more of the responsibility of learning lies with the student. The individual chooses and researches the topic in the same way that would be done for a traditional research project (Putz,

2006). However, differences in the work occur at two points in the process. First, the individual does not assume a thesis, but rather uses a question or an idea to drive the investigation. Questions generally include an overarching question that allows smaller questions to be pursued along the way. The second way that this research is different is that in the final phase of the project, the individual presents the information in different genres that "fit" the topic. As noted by Rush (2009), the use of multigenre can assist preservice teachers with their beliefs and practices about instruction. Depending on the question being asked, the genres can represent more "real world" writing. In the real world, we rarely write essays, but we often compose letters, memos, reports, lists, or applications. In the real world, we notice bumper stickers, billboards, and other forms of advertising. In the real world, we write reviews, editorials, resumes, or puzzles. While these examples are very different from a formal essay, the writer must be able to effectively communicate the message so that the reader understands. Often, the genre and audience add another layer of meaning to the message. Understanding these elements (Putz, 2006; Tompkins, 2011) is an essential aspect of writing and reading.

Anyone entering the teaching profession must be aware of how today's (and tomorrow's) technology has influenced the way that we teach (Kist, 2009; Mishra & Koehler, 2006). We cannot consider today's technology as simply an add-on or merely the replacement for earlier methods. Nor can we assume that everyone today knows how to make the best use of current technology. In general, today's preservice teachers are familiar with various communication tools (e.g., email, Facebook, Twitter), but these tools are often different than the ones that they will use in their classrooms. Most school districts require teachers to keep online grade books and lesson plans. Further, teachers are expected to have a website that provides information about what is happening in their classroom. They are encouraged to use blogs, videos, podcasts, interactive internet sites, and other forms of technology so it is necessary to provide multiple experiences with technology that will enhance their teaching prior to entering the profession.

By combining inquiry, the multigenre research paper, and technology, preservice teachers have the chance to explore teaching practices that they can take into their classroom. By using inquiry, they stand ready to be flexible and evolving because they gain experiences with the way that questions and knowledge change over the course of the project. The multigenre research paper builds on their understanding of choice and its relationship to student engagement because they are not restricted to write one long paper. This combination helps them develop their skills as thinkers, writers, and communicators. Finally, the technology component introduces them to valuable tools that they are ready to use with their students. At the end of one semester a student reflected that she used to think that writing was "difficult" and that it was

only about "papers, papers, papers." However, now she saw that "writing can be used in many different ways with many different tools."

The Language Arts Methods Course

At my university, Intern I occurs during the first semester of the last year of the teacher preparation program. At that time students enroll in four teaching methods courses, which they attend two days a week. On two other days during the week they are placed in classrooms in local school districts. While on school campuses, we intend for the preservice teachers to do more than observe, make copies, and grade papers. The university course instructors anticipate that there will be many opportunities for our students to interact with the mentor, the EC – 8 students, other faculty members, administrators, and parents. Because my course focuses on language arts, I expect close observation of the mentors' literacy instruction with an emphasis on writing.

To support my students' development of effective writing instruction, I use a writing workshop (e.g., Atwell, 1998; Calkins, 1994; Fletcher & Portalupi, 2001) format during our weekly three hour class. Each week we write in a writer's notebook, we publish our writing using author's chair, and I conduct a mini-lesson on some aspect of the writer's craft, including ideas, voice, organization, word choice, sentence fluency, and conventions. Further, students use their textbook to study the characteristics of various genres (e.g., persuasive, expository, poetry, narrative, biography, journals) and to present this information to their peers. Through this work they identify the characteristics of the genres that they find more engaging and determine ways to teach these genres in the future. As they develop and publish two pieces of personal writing, they have a firsthand experience with the writing process. Moreover, they also experience the writing process as they teach a lesson on writing to a group of students in their mentor's classroom. Midway through the semester I introduce the multigenre inquiry project.

The Multigenre Inquiry Project

The final project involves making a website on www.weebly.com. The work presented on the website consists of a Dear Reader letter, a brief informational essay (500-600 words), two substantive (longer) pieces, three shorter pieces, a unifying/visual element, a memo on each piece, and a reference list in APA format. After the informational essay, each of the pieces must reveal different pieces of information about their learning related to their inquiry question and at least two of the five pieces must be developed using other websites or technology tools. (See Appendix A for more specific details of the project.)

Phase I – Setting Up the Inquiry

To support the preservice teachers' development of an inquiry stance in the classroom, I frame the assignment with the following question: *How do I become a teacher of **writing** (and reading) to support all learning?* Until this point in their education, our students have had four courses focusing on reading theory and instruction so I emphasize the word writing in the question. This does not mean that they are to disregard reading, but it does deter questions which have a stronger focus on reading (e. g., guided reading, literature circles, and phonics instruction).

Initially, we discuss what they have noticed about writing in their mentors' classrooms. Some of the discussion focuses on what their mentors do and some of the discussion focuses on issues related to the students in their placements. As we finish the conversation, many of the preservice teachers have an idea of what they want to investigate; however, often their inquiry question is still too broad. So we do a series of quickwrites (Rief, 2003) to sort through their thinking. Questions are written at the top of a paper and they have three minutes to explain why they have this question. What experience has happened that led the individual to this question?

After they have read what they have written, I give them three minutes to write what they already know about their question. During the first half of the semester, we read from *Teaching Writing: Balancing Process and Product* (Tompkins, 2011) so they have some ideas from their text or from prior literacy courses. For the final quickwrite, I instruct them to read what they have written to this point. Once they have read their work, I ask them to further consider what they want to know. Then, they are given a final time to write. This three-step process builds reflection (Schon, 1995) into their work and typically allows most of them to develop a question that will get them started. Once they have gotten this far, then they begin to investigate their topic and send me a preliminary draft. (See Appendix B for details of the research design.)

Because some of them may be investigating similar questions, I encourage them to share ideas, materials, website information, and anything else. However, I expect individual websites for the final project. When they present their website to the class and see that they used the same information but their products are very different, it helps them gain an understanding of the individual nature of learning.

Annotations and Resources

I expect them to gather information related to their inquiry question from eight trustworthy sources and to complete an annotation on each source. In order to find the information for the

annotations, the students use a combination of journals, book chapters, and online resources (limited to two). Because one of the goals of this part of the project is to learn about teaching resources, I share information about appropriate resources, especially with regard to the journals and online resources. Journal articles must come from research-based journals (e.g., *The Reading Teacher, English Journal, Language Arts*). Online resources must have a reference list that demonstrates that it is more than a blog post or a resource like Wikipedia. I encourage the use of book chapters by providing access to a number of books by scholarly authors (e.g., Calkins, Fu, Graves, Hansen, Tompkins, and Wilhelm). All resources must be at least five pages long and more than a how-to or list of ideas.

The annotation format follows an inquiry cycle – *what, so what, now what*. The *what* section consists of eight to ten ideas learned from the resource. The *so what* section consists of any connections that were made to the ideas in section one. The connection can be a personal school experience, the mentor's classroom, another resource, or any other connection. In the *now what* section of the annotation, the preservice teachers needs to discuss how this information might be used in the future or how it informed the individual's thinking about the question. In this section, it is imperative that they explain why they will use this idea in the future. To ensure that each of the sections of annotation is being addressed according to the instructions, I collect the first one relatively quickly in order to provide feedback. I respond to all of the annotations, but the response to the first one helps to guide correct completion of the others.

Because I believe that the process involved in this project is as important as the product, I devote at least sixty to ninety minutes of each class period for the students to work. Students are welcome to use their own computers or tablets, but, whenever possible, I have computers and a printer available during class. Many of the preservice teachers are surprised that they are given this class time to work. However, this time allows them to experience a workshop classroom and supports my belief that this is an important assignment.

The instructor can use this time to mediate (Vygotsky, 1978) learning by providing book/journal/online resource suggestions. It has been my experience that preservice teachers are unfamiliar with valuable resources. They can find an article or book related to the inquiry, but it may or may not provide the most appropriate information. Since I have a library of over two hundred books and access to as many journals, I can match their inquiry to a resource. I can also point them to the resources on websites (e. g., www.nwp.org; www.ncte.org; www.ira.org).

Although they turn in their annotations online, I want to know where they are in the process.

Using a format similar to Atwell's (1998) "status of the class," I carry around a clipboard with a sheet that lists their names, inquiry question, and project requirements so that I can make notes as I confer with each of them. This conference time gives me another opportunity to assist them as they work and to monitor their learning. For me, what they learn and do during the process of completing the project often outweigh what happens when they do the final presentation. Sometimes I have students who choose narrow questions or questions that do not lend themselves to inquiry. When this happens, rather than telling them to change their question, I can provide materials and ideas during the conference that help them revise their thinking. For example, several years ago one of the preservice teacher's inquiry question was how she was going to "make her kindergarten student write correctly." I realized early in the process that she was concerned about writing as it related to letter formation. Since the class focuses on writing as the author's message, this question was a mismatch. Instead of telling her that she needed to change her question, I provided book suggestions that helped her broaden her definition and gain further understanding of the developmental nature of writing. It was exciting to see her understandings evolve as she worked through the project.

Phase II – Multigenre Inquiry Paper (MIP)

In general, our students have had many opportunities to write research papers from the time that they were in elementary school. The research paper expects the individual to relate learned information in an objective manner. However, Putz (2006) notes that the "… multigenre researcher attempts to enter the world of the subject, …" (p. 2). Thus, the material can be presented in ways that match the researcher and the researcher's question. The genre in which the information is published often adds another layer of meaning to what was learned by the researcher.

The multigenre format serves other purposes for the class. It supports my students as they gain more understanding about the different forms of writing (and reading). Requiring the use of different genres creates opportunities for my students to experiment with writing and to think from different perspectives. Although it does not require the academic writing style that a research paper requires, it still requires the same rigor with regard to the traits of writing. To highlight the ways that published authors use multigenre, we look at examples of books that are written this way discussing the author's purpose in using the various formats. (See Appendix C for a list of novels written in a multigenre format.)

Earlier in the semester we studied the various types of writing (e.g., persuasive, descriptive, poetry). Now, to remind the preservice teachers about the various forms that those types can

take, we brainstorm a list of genres with which they are familiar. We spend time talking about – when is it used, why is it used, how is it used, what conventions drive the format. I set up "genre" stations in my classroom so that they can explore genres. Finally, I provide a sheet that names a number of genres and tells how the genres might satisfy the requirements of the project. (See Appendix D for a list of genre suggestions.)

From past experiences with this project, I learned that not everyone understands that they are to do more than collect information on the question and then share what they find. For example, I have had preservice teachers investigate struggling writers, copy a list of strategies from a text, and then simply post them into their final project as a poster. I explain that cutting and pasting information does not meet the expectations. Further, the goal is for them to take ownership of the information so I am expecting them to do more critical thinking about the information. Their genres choices need to reflect some notion of how the information connects to their theory and beliefs about instruction.

To help them understand this expectation, I do a minilesson modeling how to move the information that they are learning from one genre to a new genre. In general, I focus the lesson on history or science content. First, we examine a piece of text that gives factual information about a topic but that is not necessarily written in an expository form. Fleischman's *Joyful Noise* (2004) provides some strong examples. We discuss the way that the author weaves the factual information into the poetry. Next, we read a short expository piece on a topic, and then I model how to use the information to create a different genre. Because I want them to understand that each genre needs to expand the reader's knowledge of the topic, I divide a second article into four or five sections and give groups of students specific sections to read. At the same time I give them the choice of two or three different genres that they might use to share the information with the class. As each group shares their piece, the students gain greater understanding about the way their final project will reveal information on their topic. This simulation also benefits the instructor because you learn which students need more assistance with developing genre.

Phase III – Technology

Although most of the preservice teachers have excellent technology skills, they find this part of the project as challenging as identifying the inquiry questions, finding sources, and creating the genres to share their information. I explain that technology allows us to "play" and explore, so any attempts are less permanent than pen and paper. Also, I remind them that I am learning the technology with them, so it is as challenging for me as it is for them. Because their future

students may be more technology savvy than they are, they need to be prepared to learn alongside their students (November, 2012). The sites that I suggest are ones that most districts allow so as we work on this part of the project, we talk about how they can use the sites with their students. First, everyone signs up for a website at www.weebly.com. This site is relatively easy to navigate and is free. If they want to be more sophisticated with their work, there are more tools available on the site for a fee, but those tools are not necessary for this assignment. To support the visual element of the project, the site offers a variety of backgrounds and fonts from which they can choose. In the past, I have had individuals who were able to create and upload their own backgrounds but that is not necessary. All that I recommend is that they think about their inquiry and the pieces that they are creating, and then identify a background that complements their work. For modeling purposes, I create a site at the same time and talk through the process as I work. Once they have made these few decisions, then they can start creating pages.

Since I expect them to use at least two other websites to create two of the pieces for the website, we spend some class time exploring various sites. During the first half of the semester we create a cartoon on www.toondoo.com. Prior to developing their cartoon they have written a poem about themselves usually using George Ella Lyons' *Where I'm From* (1999) poem as a model. I ask them to focus the cartoon on one aspect of their poem. Because a cartoon is generally a limited number of boxes and humorous, this format forces students to think about their ideas in a different way from the poem. A site that is similar is www.pixton.com. Both of these sites are free and easy to navigate.

Earlier in the semester I introduced word clouds through www.wordle.net and www.tagxedo.com using some of the work that the students submitted as they studied Peter Johnston's (2004) *Choice Words*. Although these sites merely require uploading information into a text box, the individual has to create the text first. This information could come from the annotations or other notes that they took while doing the research. Word clouds highlight how frequently the words appear in the document. "Wordle" allows the individual to create different shapes and to use different colors to emphasize the words most often used in the document. "Tagxedo" is more sophisticated because it does not create a randomly determined shape, but offers choices of shapes that complement the information. For example, if I was investigating information about Martin Luther King, I might choose the shape that resembled his image. Both of these sites are user-friendly so they can be used with young students.

The preservice teachers have taught me about www.puzzlemaker.com. It offers many different kinds of puzzles and makes the development of a piece for the project relatively stress free.

Elementary students have fun making different kinds of puzzles with this site so it is one that I encourage my students to try. The words and definitions highlighted in the puzzle build on the vocabulary related to the inquiry question.
In a previous class the preservive teachers have had to create a movie using a complicated computer program so they are familiar with moviemaking. In class, we look at www.animoto.com. This site is more user-friendly than the computer program while producing a similar outcome. Elementary students can use this site to make movies for their assignments. My students also enjoy www.xtranormal.com. This site creates a video but requires the individual to create a script. After creating the script, you choose a setting and "avatars," and then you cut and paste the script into the program.

Books can also be developed as a genre so we spend time on www.flipsnack.com. Again, the preservice teachers create the text and then find the format and such that match their text. This site offers more than the ability to create books. There are widgets that allow the user to create podcasts, slides, banners, photo books, and video.

Playing with these sites gives the students enough ideas to get them thinking about what they will use. However, I also encourage them to experiment with other technology tools, such as Facebook pages, Twitter feeds, email dialogues, YouTube videos, and podcasts. They can also create brochures, flyers, and signs by using other programs. Because not all students feel comfortable using the website resources, these tools provide good structures for their pieces. I help students with technology issues when I can, but often their classmates are more able to provide the assistance that is needed.

Extensions

An important element of this project is that it reaches many audiences. Students who take this class will be certified to teach elementary and middle school. Some of them specialize in English as a second language, bilingual education, science, social studies, math, or special education. The inquiry part of this project allows these individuals to align their question with their certification level and specialization. The requirements related to the technology portion of the assignment allows it to be simple, yet, it also allows more adept individuals to use as much technology as they feel comfortable using.

Currently, the annotations are turned in on www.edmodo.com as an individual assignment. However, I think that these annotations could be put on a blog. Many classroom teachers have blogs and some teachers even have their students blog about their learning during class.

I intend to pursue this idea because I want the preservice teachers to have more access to each other's information. Currently, I grade the annotations, but I would prefer that the preservice teachers see the annotations as a form of professional development. By blogging there might be a chance that they would see the work in this way.

The websites can also be used as a form of professional of development. Although they are created for the assignment, they contain many ideas that can be used in the classroom and shared with their peers. The websites also provide information about the individual's ability to use technology and to be creative. With that in mind, the preservice teachers can use the websites to market their technology skills when seeking teaching positions. They can add a resume, examples of lesson plans, a philosophy, and a letter of intent. Further, they can continue to use the website once they have a job.

Examples of Student Work (Pseudonyms are being.)

Although many students created excellent websites, I will go deeply into Maggie's site. Since she was being certified with an ESL endorsement, she knew that English language learners would be placed in her classroom. She titled her website, "*Helping English Language Learners with Writing."*

Through her Dear Reader letter, she elaborates on her inquiry in order to help the reader know her wonderings. She emphasized the need for understanding the consequences of being an English learner. Further, she indicated that some strategies, like games or groupings, might make it less difficult.

In Figure 1 Maggie's "Native Language Tagxedo" created on www.tagxedo.com can be seen. The words that are the boldest include, *native language, understanding of what writing is, more confident in writing, provides linguistic skills and strategies, and writing gets better.* Through her reading, she found that an individual's first language impacts learning in the second language (Hudelson, 1989). The world image helps her convey the idea that children bring their language with them into the classroom and this is what the teacher needs to know about the way the students can use their first language.

Figure 1. Native Language Tagxedo.

Next, in Figure 2, is the first image of Maggie's xtranormal video entitled, "Please Help Me with Error Correction," created on www.xtranormal.com . It highlights a conversation between a new teacher and an experienced teacher revolving around the support that English learners will need with errors, especially errors related to conventions. The experienced teacher tells the new teacher that the students need to be corrected in an encouraging way so they will not give up. Earlier in the semester Maggie had voiced her concern about this issue so she thought this conversation was a good way to share what she learned because some of her peers might have a similar question.

Figure 2. Please Help Me with Error Correction.

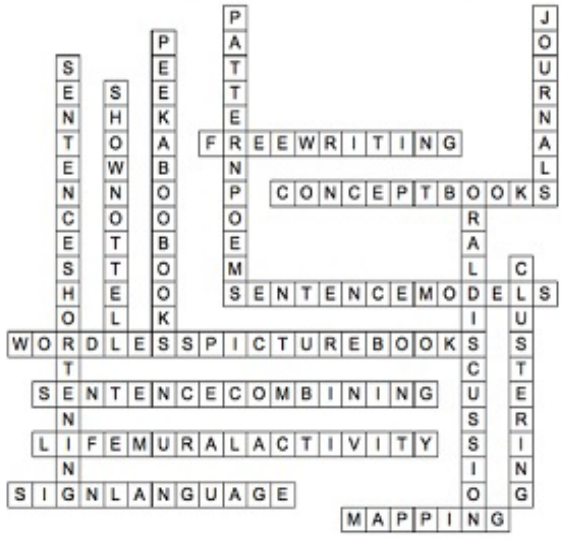

Figure 3. Writing Strategies for Beginning and Intermediate English Language Learners.

The words in Figure 3 are the answers to the crossword puzzle in her project. Maggie deemed that these ideas would be effective ways to differentiate for all learners, but like Peregoy and Boyle (1997) found that they are especially strong ones to use with English learners. By using www.puzzlemaker.com , she was able to quickly generate her puzzle with the words and definitions. Although the other two pieces in her project rely less on technology, they gave her the opportunity to use her writer's voice. For one, she wrote a newspaper article entitled, "Local Teacher Changes Education for English Learners," which highlights the successful strategies of the teacher, Mrs. Wise. Her final piece is a poem entitled, "A New Experience." Through her eloquent use of language, Maggie shares the importance and results of being a caring teacher for English learners.

Another student, Mandy, studied the importance of writing from personal experiences to help her learn how to promote writing with her students. Among her genres were a YouTube video, a poem, and a tombstone. For technology, she used www.wordle.com to highlight the important ideas from her investigation. The wordle, shown in Figure 4, allows you to quickly see what ideas made a difference in her findings.

Figure 4.Writing from Personal Experience.

In her next piece (Figure 5), she uses the Double Puzzle from the www.puzzlemaker.com site. Like Maggie the words and definitions build on the knowledge gained. Both of the pieces are quick to make and keep the students from being discouraged by complicated tools. Further, I can quickly see the kinds of connections that they are making on their topic without the burden of reading a complicated paper.

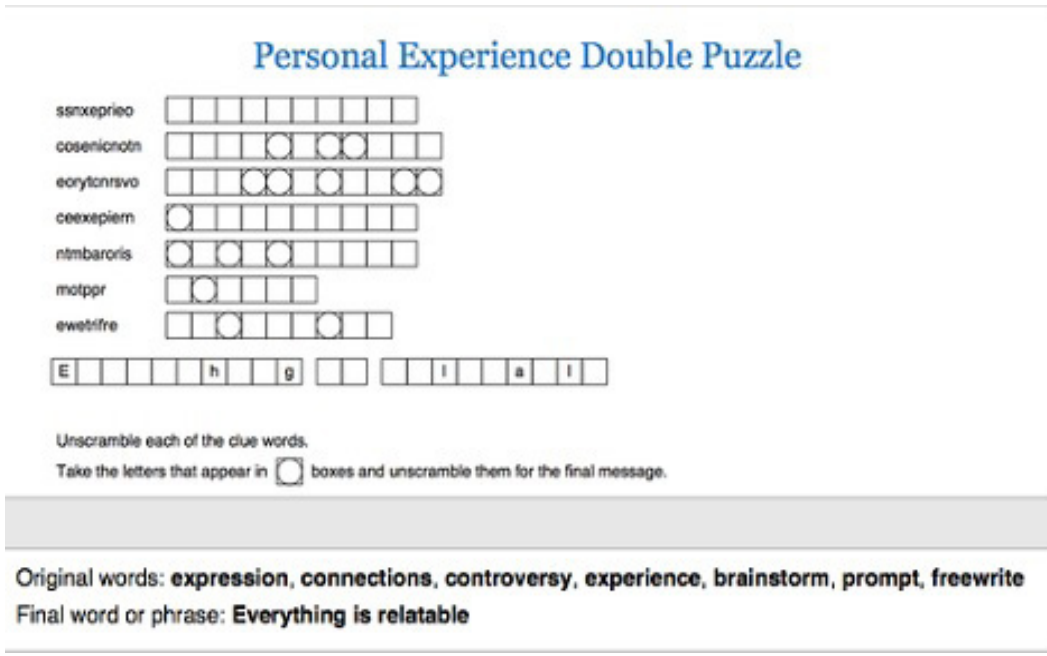

Figure 5. Personal Experience Double Puzzle.

Finally, Carrie studied the use of writing across the curriculum. She was concerned about writing in social studies, math, and science because she saw that little writing was happening in those subjects in the class in which she observed. Carrie was also concerned that the students were not writing for real purposes. Among her genres were a video, a poem, bumpers stickers, and a cartoon. In Figure 6, she provides a peek at social action through her cartoon created on the www.Toondoo.com website.

Figure 6. Social Action Paper Cartoon.

Although the project takes a great deal of time and organization for the instructor and the students, I believe that the critical thinking that occurs over the course of the assignment outweighs the time that is invested. I think that it is evident from these few examples that the preservice teachers are engaged in the work. I attribute part of this engagement because they are interested in their topic and part of it is because student choice is involved. Several students have indicated that they are engaged because they feel like they are being treated like a "real" teacher who has issues arise in the classroom and must seek ways to resolve the issues. When I see the final results and hear the students talk about their findings, I know that it has been time well spent!

Preparation and Implementation

Although I do not start this project until midway in the semester, I do some preparation for it during the first part of the semester. Since each class meeting is a three-hour workshop, I set up three or four stations that build on the work that we do. In general, one of the stations relates to the work that we will do on multigenre inquiry project. Stations that I include provide experiences like: 1.) reviewing student friendly websites, 2.) looking through texts to identify genre usage, 3.) viewing websites made by prior students, and 4.) finding information on APA format. I note the station that relates to this project so they know how it supports their learning.

Even though they have these small experiences, the instructor needs to be aware that much anxiety will occur among the students. Because they are more accustomed to being given instructions to follow, they need some time to adjust to guiding their own learning. Once they have developed the inquiry question, they realize that they have the opportunity to study something that interests them. This is exciting; however, finding the question rarely quells the anxiety. Thus, helping them identify resources is essential.

As noted earlier, the guideline sheet is important. Providing a rubric or other form of assessment when you introduce the project is equally important. Educators (Allen, 2001; Putz, 2006; Romano, 1995) provide excellent examples, but you will want to build one specifically for your work. The guidelines should include descriptions of each of the elements, but you will also need examples and opportunities to discuss them. Although I enjoy the openness of choosing genre, the Dear Reader letter, the informational essay, and the memos are non-negotiable elements of the project because they provide accountability. Even if a student has some difficulty creating genre, these elements are more concrete and doable. The rubric provides guidelines and is discussed when we start. Since this is a major portion of the semester grade, the guidelines and rubric are essential tools. (See Appendix E for the rubric for scoring.).

Preservice teachers know many genres, but distinguishing between substantive and shorter pieces is difficult. Romano (1995) refers to the genre being substantive or shorter by the number of pieces of information that are revealed. I found that it worked better when I organized the genres into substantive and shorter pieces. I do not limit them to the genres on the sheet because there are many others. If they want to do something different, I ask that they talk to me. Limiting the number of poems (especially formulaic ones) or word activities is important because I have had students who solely relied on these genres, which can limit the learning. Some of them will get stuck at this juncture because they may not have digested the information enough to be able to use it differently. Often, these individuals choose less complex genres and opt to create pieces using word documents rather than to create a cartoon or video. As long as they use the rubric to guide their work, their final grade will not suffer.

I use the presentation of the websites as the final exam in the course. The presentation format has varied as I have worked with the project. Sometimes I have asked them to display the website on a computer and then we do a gallery walk. While we view the sites, we leave messages for the individual. This format is successful because of the feedback each individual receives, but I am not certain that everyone visits every site. On another occasion, I asked the students to share two of their pieces with the entire class. Everyone is exposed to all of the sites but no peer feedback was provided. With my most recent group, I asked each preservice teacher to present to the class. They stated the inquiry question, told the most important idea that was learned, and shared the best piece and told why it was the best piece. I enjoyed this latest format the best. It provided enough about the website so that their peers were asking individuals for the website addresses. When they heard or saw each other's pieces, they were inspired. Finally, as I listened to them talk about their work, it gave me a good understanding of what they had learned and that they were applying the information to their future classroom.

If this is your first time to do a comprehensive project like this, you might consider starting in a smaller way. This can happen at different junctures of the project. For example, rather than the process of developing an individual question, the entire class could generate a list of questions from which the students could choose. Since a number of the preservice teachers might end up with the same question, they might work in groups. This would limit the number of final projects, but it may be necessary to increase the number of genres for the final project. I think that the project helps preservice teachers develop their writing skills so if groups are too big, an individual's exposure to writing may be limited. To eliminate decision-making, the instructor can assign the genre. These changes would still allow choice, while giving the instructor more control.

Final Thoughts

For years, I was bored reading the "same" paper twenty-five to thirty times for each class. I wanted my students to take more ownership of their learning and to begin to see themselves as teachers. For me, this project is a step in that direction. It also keeps me thinking and wondering about what new questions and ideas might be developed by the students. I get to learn beside the students as I try to incorporate different experiences. If you are looking for something different to do with your students, I challenge you to try this project!

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Appendix A: Multigenre Inquiry Project Guidelines (MIP)

(Guidelines adapted from Romano, 1995)

EDRE 4860

Becoming a Teacher

How do I become a teacher of **writing** (and reading) to support all learning?

1. Choose your questions wisely. —This is a chance to pursue a passion you have in language arts/writing instruction. Research extensively and then communicate your learning through a multigenre research project, where you bring together **factual, emotional, and imaginative ideas.** Use your creativity and technology knowledge. Try something new. Have fun!

2.Required Research Sources for your Inquiry:

- Articles from professional journals or book chapters: at least 8 sources that you annotate in the bibliography and directly cite in the paper. Your sources must be at least five pages in length and have references.

- Internet Sources* -- You may not use Wikipedia. Your sources should be valid sources with a reference list. Remember that how-to articles do not fulfill the requirement as a resource. Internet sources are limited to 2. If you are not certain about the source, ask the instructor.

  *First, gauge the quality of what you find in cyberspace. Second, do not simply paste material from the Internet into your paper. Your project should be original! **Your paper should inform me, but more importantly it should help me understand how you intend to work with your students!**

  3. Genres or pieces your multigenre inquiry project must contain (minimum):

  · **Dear Reader letter.** This letter should include ideas related to your beliefs about writing instruction, the questions that guide your work, the "why" it has been important to you to investigate this question, how your learning has grown over the course of the inquiry, and any other information needed to welcome the reader to your project.

  · **Brief informational essay**, 500 – 600 words. This should be informational, straight-ahead writing. Boil your topic down to essentials. This can appear as a straight mini-essay, or you can write in a form that fits your mip. Remember that you **must cite** your sources in this essay. When you write a research paper, you cite your work. Even though this is a small essay, you need to let others know where your information came from. **Use APA format.**

  · 5 pieces --- At least **2 substantive pieces and 3 shorter pieces. Remember these numbers are the minimum!** If you want a higher grade, then you need to include more than the minimum number of pieces. Substantive pieces share 4- 5 pieces of information about your topic. Shorter pieces share 2-3 pieces of information about your inquiry. Two pieces must be generated using technology, preferably a website. You will also want to add some tie-in pieces (e.g. certificates, phrases, bumper sticker,

taglines, etc.) to flesh out your project and add meaning and depth. The tie-in pieces can help to build unity to your work. Be sure to look at the rubric as you develop your work.

- **Unifying/visual elements.** You will create your website on www.weebly.com.

  Your project should be presented in a visually pleasing way so that pieces add another layer of meaning to the work. Simply loading the pieces to the website is not enough. Think about how you can add more meaning to your work. You can add a repetend, which is a repeated line, an image, or another way to tie the pieces together. Remember that this work can be foundational for the website that you will build when you are teacher.

- **Documentation** – Your **reference list** should be loaded on the website. This list comes from your annotations. It should be in the latest APA format.

  A memo is needed for each piece. The memo gives us some bibliographic information, as well as tells how this particular piece and its genre were developed.

  4. Bring your work to class so that you are ready to work on your project. Your work should be in process—research, drafting ideas, drafted pieces to get response from your group, etc. (This is NOT go home, get it done, and bring it next time to class.) I will monitor your process as well as your product.

  5. You may not repeat genre --- there are plenty to choose from! However, when you choose a smaller genre, it may take more than one to help you represent your ideas. Use the genre sheet to help you make decisions. Check the rubric.

  6. **As you work, keep track of your progress so that you know where you are in the process.** This is how to monitor your process. Status of the class is used in some classrooms so that the teacher knows what pieces students are working on. **Use the multigenre organizer and reflective log sheet. You will turn this log in on the day you present your final product.**

  7. Be ready to share your multigenre inquiry project during the last class. This presentation is in lieu of a final exam. We will discuss format of presentation during class.

  8. The scoring guideline is provided to help you put together your multigenre inquiry project and it will help to give you feedback on your work. The scoring numbers do not translate to a grade. **Remember that if you want the highest score, then you need go above and beyond.**

One tip: As you are working, keep in mind that when you are teacher, you will need to use inquiry as you think about what you need to do in your classroom. While you may not translate your thinking to a multigenre format, you will need to translate it to classroom practice. Your MIP is the just the beginning of your journey into the world of teaching.

Appendix B: Research Design for the Multigenre Inquiry Project

(Adapted from Romano, 1995)

EDRE 4860

A "research design" helps you think about your topic in a concentrated way. First there is initial exploration with words on paper. By writing, you'll have a metacognitive experience that you would not have had if you only mused about your topic.

We will begin the research design in class. Leave spaces so that you can write comments in them as you continue to think about your ideas.

Getting Started: Multigenre Research Design

Looping with Quickwrites

1) Name your topic/questions. What do you want to know more about related to the teaching of writing? Think about what you are noticing in your PDS Classroom. What's happening that makes you wonder. (Write for 3 – 4 minutes.)

2) Describe what you know about your topic. Without consulting anything, write in your writer's notebook what you already know. You can do this as bullets, if you want. (Write for 3 – 4 minutes.)

3) Reread what you have written and then write what you want to know about your question. Tell what you want to learn about. Start playing with your ideas. Go deep with your thinking so that you get to the core of what you want to know.

4) Share some of your thinking with your classmates.

5) Before you make your final decision spend some time on your own listing at least a dozen other questions you have about your topic.

6) Send your instructor a message on www.Edmodo.com with your inquiry question with a description of how you will start collecting information.

7) Create a preliminary bibliography. Do a search in the university electronic sources. This will help you find articles to inform your practice. I will bring books and journals to class to assist you once I know more about your topics.

Appendix C: Multigenre Novels:

- AVI (1991). Nothing but the truth. New York: Avon.

Appropriate for junior high school and above. We see what happens when a school incident is blown out of proportion and different points of view act upon half-truths and misinformation. Written in memos, letters, diary entries, conversations, speeches, newspaper items . . .

- Draper, S. (1994). Tears of a tiger. New York: Atheneum.

Appropriate for junior high and above. Novel about urban African American teenagers coping with the ramifications of drunken driving. Accessible and readable. Draper, 1997 National Teacher of the Year, is a veteran teacher in Cincinnati Public Schools. The story unfolds through letters, dialog, newspaper accounts, poems, student homework assignments, even a five-paragraph essay.

- Klise, K. (1995). Regarding the fountain: A tale, in letters, of liars and leaks. Logan, IA: Perfection Learning.

Appropriate for students 9 to 12 years old. From on-line: "In letters, postcards, telegrams, memos, newspaper clippings, and handwritten notes, the book tells the story of a school's attempt to replace an old water-fountain and the discovery of a thirty-year-old mystery in the process." Great reviews from kids and adults.

- Ondaatje, M. (1984). The collected works of Billy the kid. New York: Penguin. Original edition, Toronto: House of Anansi, 1970.

Violence and brief explicit sexual passages make this book appropriate for mature high school students and adults. A complex and compelling book that is all the more rewarding if contrasted with factual accounts of the life of Billy the Kid. Readers see how Ondaatje takes historical material and writes about it imaginatively.

- Yolen, J., & Coville, B. (1998). Armageddon summer. New York, NY: Harcourt Brace.

Appropriate for junior high and above. Compelling, sometimes humorous story of two teenagers who follow their single parents to a mountaintop because their religious leader claims the world will end July 27, 2000. Fanaticism, responsibility, love, empathy, faith, courage, loyalty, family. Includes sermons, FBI files, camp schedules, email, radio transcripts, and narration with alternating points of view.

Appendix D: Genre Suggestions

Genres that support longer text –

bedtime stories
biographies
campaign speech
children's book
conversations(3-4pgs)
double voice poem
encyclopedia entries
game rules
interviews
magazine article
mysteries
pamphlets
plays
quizzes
research pieces
video
wills
autobiographies
book reviews
brochures
character sketch
contracts
critiques
editorials
essays
how-to speeches
journals
lyrics
memoirs
newsletters
parodies
questionnaires
resumes
speeches
interview

Genres that support longer text, but you can only have one

dedication
editorials
book jacket
fable
menu
directions
letters
sales pitch
job application

Genres that are shorter --- you may only have one of these –

Word search
crossword puzzle
acrostic poem
calendar for a week
time line
recipes
lists (15 items)
observational notes
Wordle/Tagxedo
schedule
table of contents

Genres that are shorter --- you may only have one of these –

tv commercial (2)
Bumper Sticker (3)
ads (3)
definitions - (3)
graffiti (3)
poster (2)
slogan (3)
stickers (3)
award (3)
headline (3)
Tweet (160 characters) (4)
riddles (3)
email (2)
caption (3)
billboard
diplomas (2)
memos (3)
real estate notice (2)
stamp (3)
tombstone (3)
announcement (2)
certificate (2)

(Check on these for number needed)

Could be either depending on the number

Baseball cards – 3 for short --- 6 for long
diary entry - 3 for short--- 6 for long
postcards - 3 for short --- 6 for long
poem - 3 stanza for short – 6+ for long
flip book -- 4 pages for short – 8+ for long
product descriptions – 3 for short – 6 for long
cartoon -- 4 boxes --- 10 boxes
tickets -- 4 for short --- 8 for long
riddles ---- 4 for short --- 8 for long

(Combinations of these could be used. Check with the instructor.)

Appendix E: RUBRIC FOR MULTIGENRE INQUIRY PROJECT *

Required Elements
Dear Reader (10 points) Notable—Reader wants to read on! Writing is interesting and compelling. Sets the reader up for what is ahead. Adequate—Provides useful information, not too brief or too long. Minimal—Provides little substantive information, is overlong or too brief. Absent—Missing or so brief and perfunctory that it might as well be absent
Expository Piece (Essay)(40 points) Notable—Vivid, interesting information. Adds insight and depth of the overall paper. Well written with active verbs, specificity, and few wasted words. Adequate—Interesting, though not particularly vibrant writing. Minimal—Little interesting information. Rambling, unfocused, ho-hum writing Absent—Missing or so brief and perfunctory that it might as well be absent
Substantive Pieces (30 points X 2 = 60) Notable—Information in each piece shows clarity of thought. Information is clearly based on fact. Attention given to word choice and organization. Genre makes a difference to the way that they pieces are written. Adequate—Information in each piece shows clarity of thought. Information more fact related than made up. Minimal—Information in each piece shows clarity of thought. Information tends to be less fact related such that it could be written without research. Absent—Information is totally taken from other people's work—i.e. pictures off of internet, made up info w/o details
Shorter Pieces (10 points x 3 = 30) Notable—Succinct but plays a major role. Substantive pieces are strengthened by these smaller pieces. Adequate—Succinct. Makes the work more cohesive. Adds clarity. Minimal—Succinct. Limited role in the overall pieces. Does the job. Absent—Pieces do not add to the overall unit—pictures, copied poems, etc.
Unifying/Visual Element (20 points) Notable—"Art" of presentation adds another layer to the work. Appealing to the eye. Meaningful to the intellect. Lets the reader see something s/he would not be able to know by words alone. Website background makes a statement. Adequate—"Art" of presentation is appropriate. Minimal—Little attention given to the "art" of the multigenre pieces. More like a frill. Not necessary to meaning. Absent—Pieces handed in w/o any "art" OR nothing more than clip art.
Documentation of Work (Reference Page/Memos) 30 points Notable—List of references in APA format. References are a wide range of sources (minimum of 8). Each piece has a memo that gives specific information about how piece was developed and/or additional useful information about topic and/or research that went into producing the piece. Adequate—List of references in APA format. References show a broad range of sources (6-8). Each piece has a memo. Minimal—List of references. References show 3-5 sources. Absent—Missing or so brief and perfunctory that it might as well be absent.
Mechanics/Spelling (10 points) Notable—Careful attention given to mechanics and spelling—may have 1-2 errors. Adequate—Contains more than a few errors, but meaning is not seriously affected. Minimal—Contains enough errors to make reader wonder if the writer proofread carefully or wish the writer knew more about punctuation, grammar, and usage. Absent—Contains many errors to the point of distraction.

*Remember when you do the minimum number of elements for the project, you will receive "Adequate" as your grade. So if you want "Notable" as your grade, then you will need to do more.

Chapter 3

No More Index Cards! No Notebooks! Pulling New Paradigms Through to Practice

Nanci Werner-Burke
Mansfield University of Pennsylvania, USA

Dawna Vanderpool
DuBois Area School District, USA

Enraging

The collective groan was audible down the stairwell and into the parking lot. I'd placed several stacks of index cards on the table while calling for my 9th graders to shift their attention to the front of the room. First the groan, then the barrage of comments: "Notecards? I hate doing those!" "I don't want to go to the library!" and others, far less than polite, a few mumbled and indecipherable in content but crystal clear in tone.

The above episode was fifteen years ago, but recently I observed a high school class again being instructed in the proper-and- painstaking use of note cards. The student reaction was much the same, though this time some of the groaning was blocked by ear buds and I am sure additional comments were texted under the desks.

…or Engaging?

Sweeping changes in pedagogical concepts and in communication and information technologies have occurred in our professional literature, and in our everyday lives. Preparing our educators to understand these changes is not enough. They must be able to also use this awareness to inform their instructional choices, and ultimately, to improve their students' learning. This article focuses on the practice of writing to learn, specifically through note-taking, as an integral part of learning to write or compose, and then examines how these processes can be enhanced through the exploration of digital tools. The framework for this exploration is teacher education, delineating a protocol for teacher educators to better prepare their students to extend these practices in a modern teaching paradigm.

The professional concept of writing as a social process matured almost in parallel with substantial developments in digital technology, but the points at which they actually intersect vary

hugely across middle school, secondary, and college classrooms. On early microcomputers, composition-related applications were largely limited to the identification of low-level grammatical and spelling errors and the ability to make changes to a text without having to retype the entire document (Haas, 1996). As the social and constructivist facets of literacy became more central to pedagogy, the push to have the movement mirrored in the technology began (Hawisher, LeBlanc, Moran, & Selfe, 1996) and continues to unfold. Stephens and Ballast note that at present, "Communicating in the 21st century inevitably leads to writing" of text messages, email, and on wikis and blogs (2010, p. xiii). However, while that type of writing has been the subject of many studies, less has been written about the combination of note-taking and technology. Similarly, most teacher education programs strive to expose teacher candidates to different types of technology and theories of pedagogy. To be effective, exposure must be complimented with scaffolding and field work, to ensure that these individuals will be able to apply these experiences and concepts skillfully when they have classrooms of their own.

When we talk about note-taking, it is useful to think of The National Commission on Writing's (2006) characterization of writing as "thought on paper". Once we have a written record of our own thoughts, the avenues for expanding and honing our ideas increase significantly. The act of written articulation allows us to make our thinking visible, (Zywica & Gomez, 2008), so that it becomes a tangible entity that can be shaped and crafted. Written communication increases the ability to reflect and process concepts, thereby increasing comprehension (Blessman & Myszczak, 2001). When working with information from other sources, i.e. thoughts from others, note-taking requires the ability to highlight or identify key information from their work and to make our own record of it. This step, when skillfully done, goes beyond summarizing skills. As we grapple with cognitively processing new information, we impose our own schema into the task of organizing the ideas, in our efforts to understand them better (Tan-de Ramos, 2010).

In 'the old days', note-taking at the college level was "pervasive". In 1974, Paltamier and Bennet found that 99% of college students took notes during lectures, and Dunkel and Davey (1989) reported that 94% of U.S. college students regarded note-taking as an essential means of assimilating lecture content (in Williams and Eggert, 2002). In the age of new literacies, our access to information has increased exponentially. Lectures and presentations are readily available online, and the work can be viewed as many times as needed. But the changes go beyond the sheer amount of information; social media tools like blogs, discussion boards, and wikis allow a reader to access the connections others have made to different ideas. This window into the thoughts and reactions of others can scaffold and influence the reader's thinking about the content.

Given these changes, shouldn't we be questioning and re-tooling how we help students to cope with this flood of data and facts? Teachers must first actually use a variety of note-taking strategies and be aware of the benefits of each approach. They must also have more than a passing familiarity with the different ways technology can extend these strategies. "Even if we're proficient and comfortable with technology in our own lives, we lack know-how (or confidence!) about how to incorporate it into our classrooms" (Baxter, Conradi, Labbo, & McKenna, 2011, p.362). As teacher educators, we need to address these issues head-on.

Step by Step: Laying the Groundwork for Digital Note-taking in a Teacher Education Class

In my class for pre-service teachers, one informal activity that I use to gauge the willingness of students in the class to participate in note-taking is implemented by asking them to make a print copy of a professional article and to mark it up with annotations and notes in the margins. Providing highlighters facilitates this marking-up phase. The articles are collected before a discussion of the article itself, and reviewed to see which students have fully interacted with the content by highlighting and writing notes and comments, which students have only highlighted key points to remember, and which have not made any marks at all. Using a document camera, these examples are anonymously shown to the group to demonstrate the range and types of possible interaction. This activity serves as entry point into an examination of different formats for note-taking, including split-page notes, directed note-taking activities, and Cornell Notes.

The students are also required to keep a notebook for the class and to bring it to every class meeting, to date every entry, and to devote the pages solely to ideas and questions that are related to the coursework. The types of information that should go into the notebook are identified in the syllabus and discussed, with the emphasis that notes are not just a place to record information, but a space to begin to organize and make sense of it. On different days, for different topics, the class is asked to use enumeration, underlining, and graphic organizers. We explore and model a variety of note-taking approaches and discuss how each one could be used based on the objectives for a lesson or project.

Throughout the course, content-related writing prompts are posed, and the class takes five to ten minutes to address the prompts in writing before using their responses as a basis for discussion. The activity concludes with a dissection of how the prompt was crafted to facilitate specific or general information, personal connection or recall, higher-level or lower-level thinking, and so on. In this way, the group practices writing frequently and begins to understand how word choices shape expectations.

Variations of the following questions are used as a notebook prompt at the conclusion of the activities:

> Set One: Where you formally taught to take notes? If so, do you actually use this system now? How does your note-taking vary from situation to situation and why?
>
> Set Two: How will you use notes to support learning in your own classroom? For what reasons and activities would your students need to take notes? How will you teach and assign grades for note-taking?

The first set of questions is designed to help the students reflect on their own note-taking experience and use. Discussion reveals that many of the teacher candidates were not formally taught a system of note-taking. All candidates recall instances where they struggled to find an approach that would work for them in a given situation. As we talk, it becomes apparent that different people utilize different approaches and that one-size generally does not fit all needs or learning styles. Running through the session is the underlying theme of using writing as a tool for learning and thinking.

The second set of questions is intended to facilitate transfer of our discussions and work into pedagogy and practice. Typically, my pre-service teachers are still in the learning mindset, having just settled into using the different types of note-taking methods themselves. They view tools and methods as relating to their own learning, which is a step past not using them at all or doing so indiscriminately. This is the point where we begin the transition toward purposefully integrating the tools into their teaching approaches.

Once we have incorporated these different types of note-taking into our daily routine, the class is paired off and begins to work with a group of freshman-level students who are enrolled in college reading support classes. The goal is for the teaching candidates to examine different note-taking practices and help the freshmen to establish an approach that works for their learning needs. This phase of the scaffolding is closer to peer-tutoring than to traditional teaching, but it can effectively "nudge" all but the most hesitant candidates into the leadership role.

The candidates also view examples of middle and high school student writing and note-taking. Archived examples and anchor sets are used as a platform for field work. This phase also involves contacting several area teachers, who share how they are currently using note-taking in their classes. Teachers are selected for participation if they are using technology in their class-

rooms or are interested in integrating new tools. This phase allows the pre-service teachers to see how different strategies look and work at the grades levels they will be teaching. Technology is a part of the overall exploration, by design, and yet the focus remains on establishing the end goal for student learning and using that goal to select the right method of note-taking. The actual formats and tools that are utilized are based on the needs of the school students and their skills and so change each time the project is implemented. The pre-service teachers investigate the context through onsite observation and questioning, and through online communication via email and discussion posts. They then analyze their findings and make decisions about what needs to happen next and how to implement it.

In some cases, more data is needed, in others, mini-lessons or online discussions are appropriate. When a tech service is already in place, the teacher candidates must take steps to learn it, and when one is being introduced they need to master it and create examples so that the service can be modeled as part of instruction. It is mandatory that the classroom teacher has set instructional goals in mind and communicates those to both sets of students, as this gives the school students and teacher candidates a clear idea of what they are working toward.

In the next section, we will explore a total of three digital tools that work well for this project. The section is followed with one that showcases classroom examples and applications of the tools from pre-service teachers and middle school students.

Supports and Extensions: Planning for a Range of Contexts

The online Cornell Notes PDF Generator (Stewart, n.d.) is appropriate for students who are just learning effective note-taking, and also for the teacher who is just beginning to experiment with online technology. Noodle Tools is a powerful service for facilitating note-taking for the purposes of organizing and writing a research paper. It offers a range of features that can be utilized with varying degrees in almost any classroom. Diigo, a social-bookmarking tool that features online annotation and commentary, promotes and supports higher-order reading comprehension and written discussion. These services are described in the order they are listed, with each building upon the previous one and increasing in complexity.

For students that are not yet familiar with note-taking, a system such as the Cornell method can serve as a scaffolding piece. The traditional Cornell method, which is fairly-well known, involves dividing up a sheet of paper so that there is a thin column on the left side for students to identify keywords and ask questions. A larger column on the right side provides more space and is designed as a place for main ideas to be recorded, and a third area is marked off at the

bottom of the page for students to use their own words to write a summary. While this approach is fairly simple, it has been proven to be effective in terms of promoting in-class attention and the retention of information, as well serving to empower student to become active in their learning (Donohoo, 2010).

The online Cornell Notes PDF Generator allows a user to set up the page online, and then print it, rather than formatting the page by hand. Again, this service represents an entry-level approach to both note-taking and online tools.

The use of a service such as NoodleTools, in conjunction with online databases and Internet sources, can significantly streamline the note-taking and writing process so that the teacher can devote more time to the actual development of thoughts and support reading and composition skills. NoodleTools is a pay to use service, though we find the fee to be a fairly a reasonable one, and free trial subscriptions are available. Based on our experiences with Noodle Tools, both authors agree that it is worthy of our best advocacy efforts to secure subscriptions for our students and assist them with learning to use it. It is also possible to duplicate some of Noodle's features by using Microsoft Word and/or PowerPoint to create a page or slide that is formatted into the different sections that a Noodle notecard features. Though these programs are far more expensive than Noodle Tools, they are more commonly available, and depending on your context, creating your own templates may be more appropriate.

Before leaping into the implementation of this tool, it is useful to establish what it is and is not. Noodle is a comprehensive service that was designed to encompass all aspects of writing a research paper. It offers features that integrate note-taking from sources, outlining and citing, and word processing. Users track their sources, information, direct quotes and paraphrased facts—all on-line, so that there is nothing for the dog to eat or to students leave in their lockers or cars. Teachers and instructors have access to all student work, can track when students work on their files and for how long, and may make comments at all stages of a project or assignment. Additional features include virtual note cards, a works cited generator, Google Docs compatibility, and drop-boxes and document sharing, which are perfect for facilitating peer review. The interface is extremely intuitive for any user who is already familiar with the idea of collecting information and using it to create a new text.

Diigo is a social bookmarking service. To utilize this tool, a reader creates an online account and installs the Diigolet toolbar. The toolbar lets the user bookmark useful webpages and saves the URL in the user's account, which can then be activated and accessed on any computer with

internet access. The bookmarks are both portable and customizable: the reader chooses his or her own descriptive keywords (tagging), and can organize sites by category.

In college, pre-service teachers get accustomed to highlighting and writing in their books. They often use annotation to highlight important information like main ideas (argument or claim), supporting ideas (evidence), key content vocabulary words, definitions, and transitions within the text. However, when they assume their role as classroom teachers, this approach does not carry over, as most districts cannot afford to have students write in their textbooks. Diigo can provide a solution, as it also allows for online highlighting of web sources that are formatted in hypertext mark-up language (.html) and allows users to post annotations in the form of online sticky notes, which can be designated for public or private viewing. An additional feature is that of interactivity: new resources are generated by the tags of like-minded readers who comment indirectly through their tags and directly through online postings.

Snapshots from the Classroom

As with any good teaching, modeling the process helps make it visible and more practical for students. It also makes your demands on them a little more credible if are you engaging in the work along with them, and this is true if you are a post-secondary instructor or a high school teacher. Pre-service teacher candidates can sometimes struggle with being too directive and prescriptive. When they model thinking and writing with the students, they are working in a more collaborative mode, and also producing work that can be used to illustrate the different approaches for their students.

The following graphics are intended to provide visual examples of the tools we have discussed, and include the Cornell Notes PDF Generator template (Figure 1), model NoodleTool cards and school student examples (Figures 2-5), and a screenshot of the Diigo highlighting and sticky note features (Figure 6).

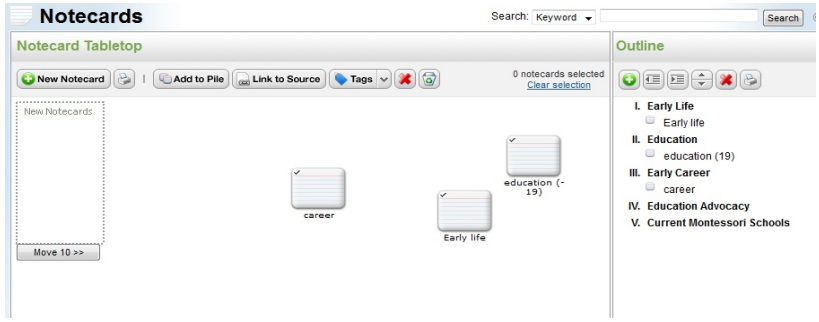

Figure 1: Cornell Notes PDF Generator. The online service allows the user to format a printable page in format that be used to introduce effective note-taking Noodle Tools

Figure 2 shows a model created for an 8th grade class, on the topic of Maria Montessori, including an outline and digital notecards with information from online sources.

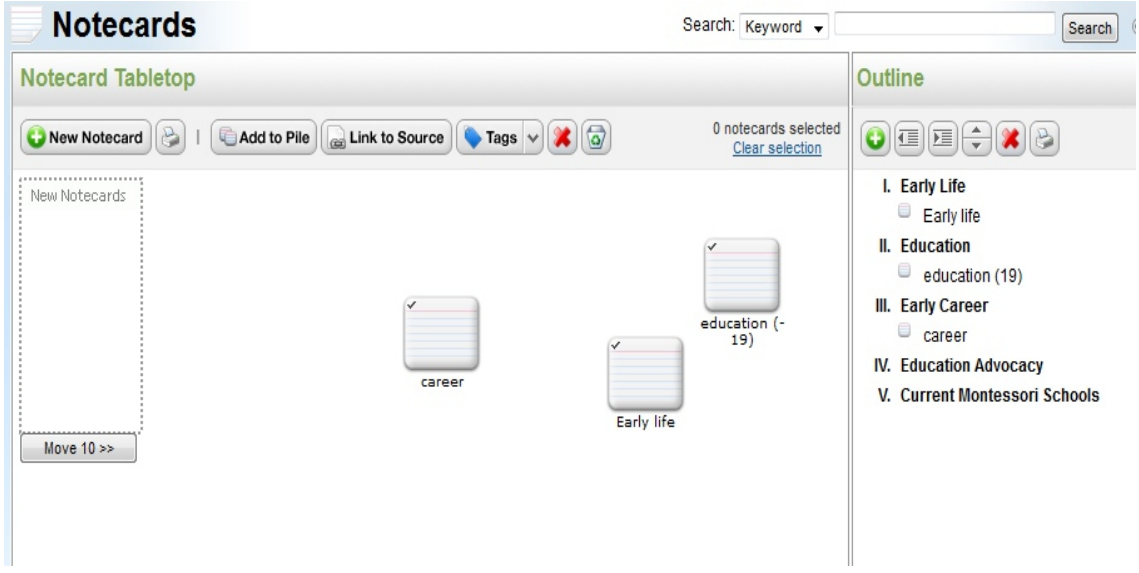

Figure 2. Modeled example for NoodleTools. A demonstration prepared for a middle school class.

NoodleTool notecards can easily be "stacked", then dragged to the appropriate section of the research outline. From there, even the most reluctant writers can keep their information organized and produce a decent rough draft.

In Figures 3 and 4, we see the work of two eighth graders, Brandon and Gabi. Figure 3 shows Brandon's Noodle notes on the aftermath of Pearl Harbor and Figure 4 shows both the depth of Gabi's outline of her paper for her paper about Michael Phelps and her work log. This was not the first foray into research for these students. In the DuBois Area Middle School, where these samples were created, the students all go through the research process together, researching and giving a formal presentation on Greek mythology. This unit runs concurrently with students' study of the ancient Greeks in their seventh grade world cultures class. To prepare for that project, seventh grade students complete a mini-research project, My Hero, in which they learn the process of using NoodleTools. The project is implemented collaboratively between the classroom teacher and school librarian. Because of the scaffolding and foundation skills they develop during the seventh grade project, eighth graders need just a quick review of NoodleTools and teacher models before they head off to search for information and sources. This background information is essential to understanding the context and the skill-levels of the classroom students, and serves here to illustrate just the type of information that pre-service teachers should be looking for when they enter a school setting.

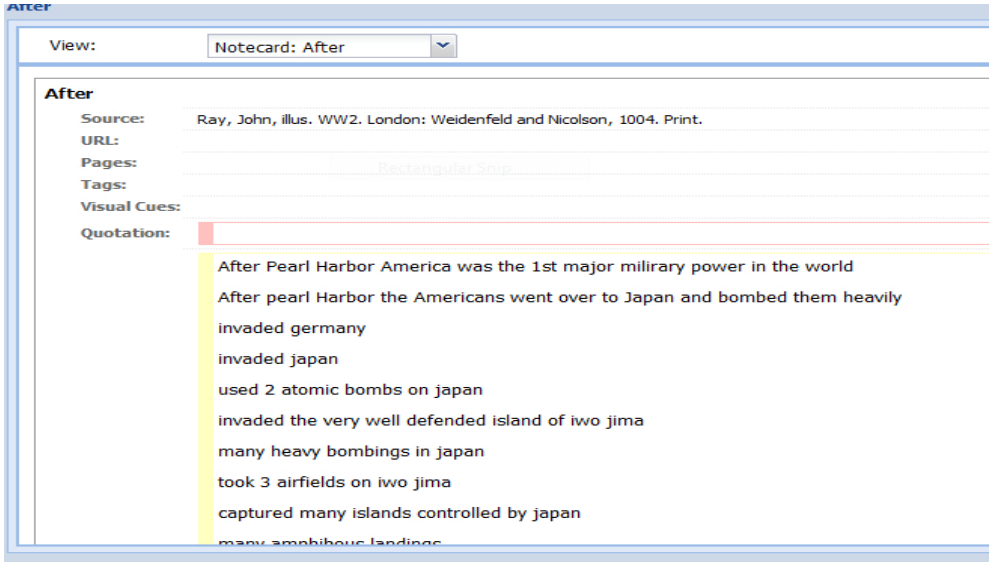

Figure 3. Student-created NoodleTools virtual notecard. Brandon's notecard for his Pearl Harbor paper

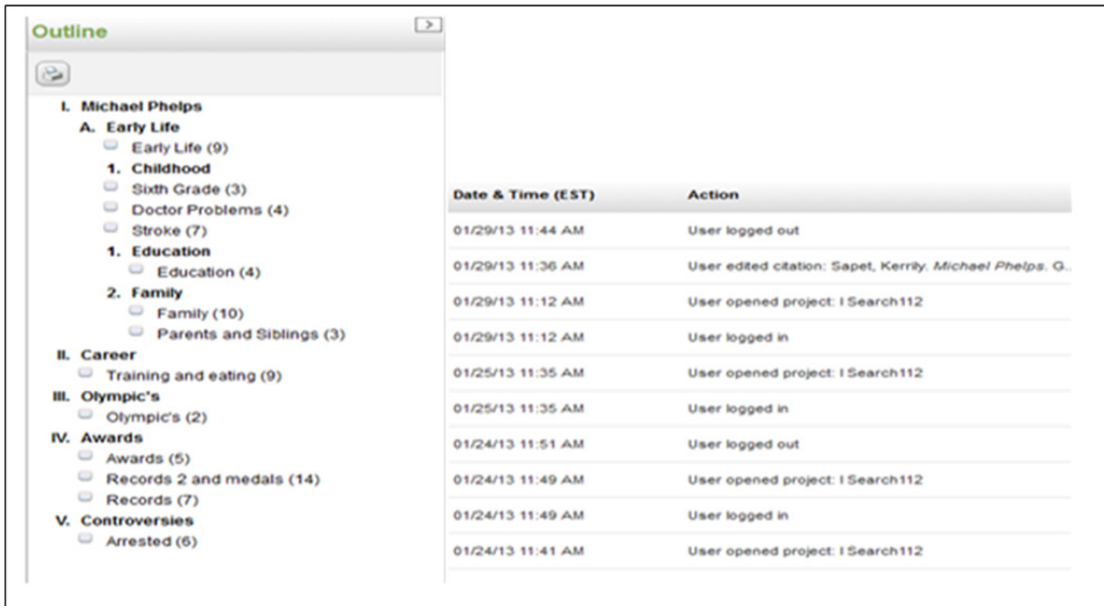

Figure 4. Student-created NoodleTools outline and log. Gabi's outline for her paper about Michael Phelps

A goal for the school district was for students to be able to build their skills and improve them each year in school, eventually taking on complete ownership of their work. This is more likely to occur when they are supported early on, and when the tools they utilize are of high quality. NoodleTools seems to fit these criteria, as noted by Matthew Getz, an upper division English Education major at Mansfield University of PA:

> "The Noodle Tools Service has changed research for me. With the Noodle Tools note card feature you can quickly refer to specific sections, pages, and sources that you want to include in an idea. If something comes to mind, you can quickly make note of it and refer to it later. In my personal experience I've hunted through note cards and sources looking for that one "perfect quote" or concept that I just can't seem to remember. The Noodle Tools note card function ties each idea to specific sources of your project, so hunting down information is no longer an issue for me. Noodle Tools has saved me many hours of compiling sources and searching for tidbits of information, so I would recommend it to any student for their projects."

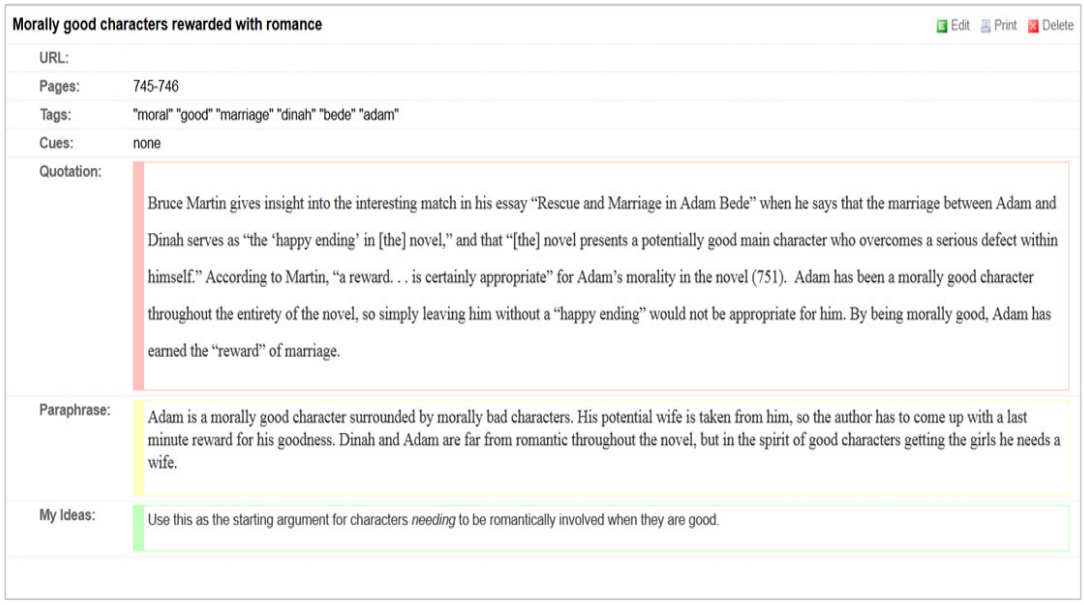

Figure 5. A completed Noodle notecard model. Matt Getz demonstrates use of the quotation feature on NoodleTools and the paraphrase/my ideas features that move writers away from plagiarism.

Diigo

Online highlighting and annotation sticky notes can be used to support reading comprehension through highlighting and written commentary, as in demonstrated in the screenshot in Figure 6, created by Angie Martinez, a pre-service math teacher enrolled at Mansfield University.

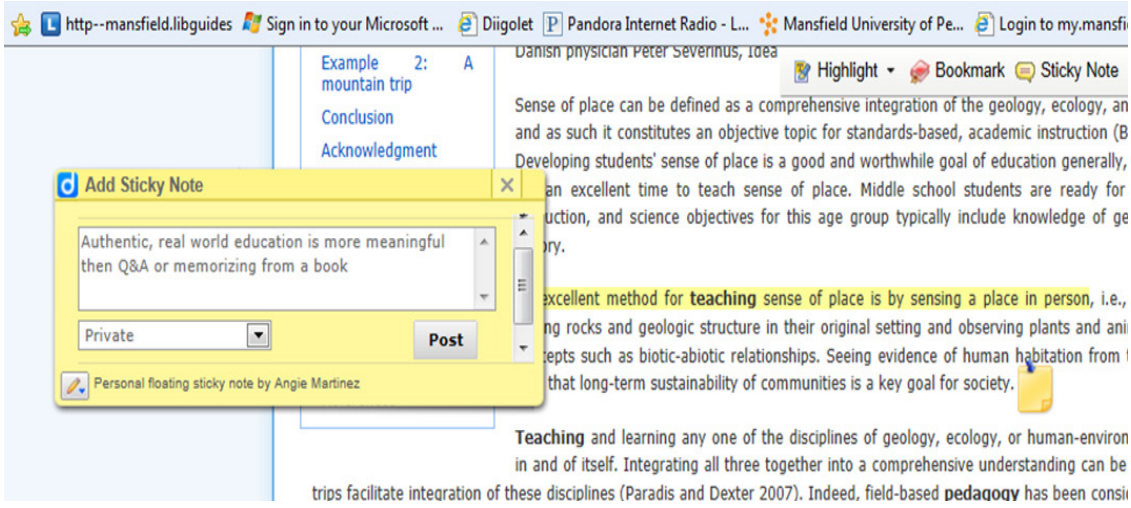

Figure 6. Diigo tools. Online, onscreen highlighting and annotation

Your Turn

Teacher educators should take steps to survey what attitudes and skills their students have, in terms of both technology and note-taking. Incorporate regular reading and writing tasks that develop content knowledge and literacy skills, but include an application step that requires them to consider how they will use this knowledge in their teaching. Also, be cautious in planning field work. Start small until you have established a good professional relationship with a group of teachers and the school district. Work with your university's educational field office and follow their guidelines. Be certain that your students have all required clearances in place before working with school students. Contact building principals before approaching individual teachers, and ask about district policies about the use of technology. Keeping your goals in mind and student learning in the forefront will help shape the tools and note-taking methods that will make your project effective and useful for future teachers.

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Chapter 4

Exploring Writing with iPads: Instructional Change for Pre-Service Educators

Joan A. Rhodes
Virginia Commonwealth University, USA

Juhanah Johnson (pseudonym) is a student like no other I have met. She popped into the first meeting of my diagnostic reading course full of enthusiasm announcing, "Today is an EPIC day! Good morning everyone!" How could a professor and fellow students be unaffected by her passionate enthusiasm for learning and life? Not easily ignored, Juhanah's frequent expressions of excitement regarding all that lay ahead for the semester actually spread like a contagious virus among her classmates.

Juhanah, like her classmates, was prepared for a course where she would apply the knowledge she had gained from classes in children's literature, writing and the foundations of reading. Through one-on-one tutoring with an at-risk reader during a literacy clinic, she would gain experience with instructional techniques, lesson planning and behavior management. Included in this practical instructional experience was an expectation that the pre-service teachers utilize an iPad supplied by the university to provide literacy instruction within their tutoring sessions. During individualized instruction, the teachers used a variety of iPad applications (apps) to enhance written expression, improve grammar and punctuation and engage elementary students in writing for real audiences. Juhanah was the perfect type of student to have in a course where teacher candidates were experimenting with instructional technology for the first time. Enthusiastic and adventurous, she willingly honed her skills in using technology to meet her instructional objectives while actively supporting her classmates' efforts.

Incorporating Technology in the Tutoring Program

Consider for a moment these prophetic words of Marshall McLuhan and Quentin Fiore (2011),

> "The medium, or process, of our time - electric technology - is reshaping and restructuring patterns of social interdependence and every aspect of our personal life. It is forcing us to reconsider and re-evaluate practically every thought, every action, and every institution formerly taken for granted. Everything is changing - you, your family,

> your neighborhood, your education, your job, your government, your relation to 'the others'. And they're changing dramatically." (p. 9)

This sentiment is as relevant today as when it was penned in 1967. As educators, we find ourselves in a significantly changing world where digital technology and multimedia creation have dramatically altered the expectations we have for reading and writing in K-12 classrooms. Today's students read academic content on mobile devices and share their thoughts in a multitude of digital text environments (Dahlstrom, 2012). From 140 character tweets using Twitter to full-blown multimedia productions, youngsters are spending significant amounts of time writing for audiences within and beyond the classroom walls.

These changes also require teacher educators to reflect on their preparation of pre-service teachers. Teacher candidates, like Juhanah, must have the pedagogical tools and technological skills necessary to assist young writers as they become both media and information literate. Young authors must be able to find, locate and use information in digital and paper-based texts (Henderson & Scheffler, 2004) and create, access, evaluate and analyze media information (Walkosz, Jolls, & Sund, 2008). Prensky (2010) suggests that the role of modern educators must shift towards acting as facilitators of knowledge acquisition using a guide-on-the-side partnering model when utilizing technology with children.

Traditionally, as new technologies emerge for classroom use, educators work to integrate these tools into existing classroom instructional practices. Hutchison, Beschorner, and Schmidt-Crawford (2012) suggest that educators must reframe the way they adapt technology for classroom use. Rather than focusing on technological integration that looks at information communication technologies (ICTs) as separate from the curriculum, teachers need to focus on curricular integration, which regards ICTs as integral to the curriculum.

Unfortunately, current research notes that educators rate the importance of using ICTs with students as greater than their actual frequency of use in the classroom (Hutchinson & Reinking, 2011). Carter, Smith and Rhodes (2011) report a similar phenomenon in university preparation programs where pre-service education students report inconsistent use of digital media in their courses. University educators must offer opportunities for teacher candidates to practice teaching with digital technologies using a curricular integration focus where they consider learning objectives and pedagogical decisions prior to considering the technology they will use to conduct their lessons.

Clinic settings, where teacher candidates are able to work one-on-one with students, offer an excellent environment for experimentation with instructional technology. Pre-service educators can easily partner with their students as they test new writing tools and instructional techniques. The mobility and flexibility of iPad technology in the clinic environment allows for work anywhere in the school and the seamless incorporation of multimedia writing activities into tutoring sessions.

Using iPad Technology for Writing Instruction

When beginning to use iPads in the clinic setting, faculty members need to take time to familiarize themselves with the Apple operating system and the device itself. Novice users need a significant period of "playtime", a time for exploration much as we offer children as they begin to use a new manipulative in the K-12 classroom. Interacting with colleagues to share ideas, reading books like *My iPad* (Rosenzweig, 2013) and reviewing resources like *Getting Started with Apple iOS Devices: A Guide for Using iPad, iPod Touch and iTunes for K-12 Teaching and Learning (2012)* on the Apple website were helpful strategies to increase instructor confidence.

Once familiarized with the iPad device, faculty should consider the level of support available from their university for obtaining or borrowing iPads for classroom use. Securing devices through small grants and collaborative efforts with the technology services department can allow each teacher candidate in the class to have an iPad for the duration of the semester. Recently, a number of pre-service educators have come to class with personal iPads, which they prefer to use for coursework. Allowing flexibility through bring your own device (BYOD) procedures permits the redistribution of limited iPad resources to other university courses.

In addition to securing iPads, instructors need to determine the level of wireless service available in the clinic setting. On-campus settings may offer expansive internet service whereas off-campus settings often require prior coordination with the local school system. Clinic instructors should consider the size of their classes as they test the school system and university log-in requirements for devices that are not part of the established network. These preparations must be considered prior to the first iPad session. There is nothing worse than bringing a set of iPads into the clinic and finding that the teacher candidates cannot access the system or download apps. Faculty can increase the odds of a smooth introduction to using iPads by asking teacher candidates to establish an iTunes account in advance of the first class session. Experience suggests that most college-age adults use iTunes for downloading music and are usually familiar with its format.

Teacher educators need to consider what will be accomplished by using iPads during tutoring

sessions. The iPad should be viewed as more than another "cool tool" to have lying around on students' desks. The purpose for using iPads needs to be articulated in the course syllabus and expectations related to iPad assignments should be specified. In the case of writing instruction, teacher candidates may enhance tutoring activities by utilizing visual images during planning and as a complement to student-created text as well as by providing lessons that combine writing with vocabulary development and fluency instruction. Pre-service educators are also able to use the enhanced editing and revising features of iPad applications to assist their students as they prepare for publication of written work. Faculty should anticipate pre-service educators' needs related to developing learning activities and making pedagogical decisions when planning to use iPads for writing instruction.

When specific learning goals for the course are established, teacher educators should consider the apps they will introduce during lecture sessions. There are many sources for learning about apps, but instructors must do more than select a few apps from a recommended list. Both course instructors and teacher candidates must take time to test apps and determine whether they meet the students' needs. In one clinic course, pre-service teachers researched criteria for determining the quality of literacy apps following a lecture reviewing the revision to Bloom's Taxonomy (Krathwohl & Anderson, 2010). The revision places creation of content at the highest level of the taxonomy and suggests that students be encouraged to use higher level thinking skills in instructional activities. During the class discussion, criteria for reviewing apps were shared and a rating system that considered the revised Bloom's Taxonomy was established for use during the course. A writing app selected by the course instructor was evaluated using the rating system as a model. (See Figure 1 for the student generated criteria.)

iPad Application Evaluation Criteria

1. Relevance
2. Engaging for Students
3. Ability to Share
4. Ability to Provide Feedback to Student
5. Customization to Meet Special Needs
6. Accuracy
7. Encourages Use of Higher Level Thinking Skills
8. Cost

Figure 1. Candidate generated criteria list for evaluating iPad applications. Applications are evaluated on each criterion on a 1 – 10 point scale, where 1 is a low score and 10 is a high score

Teacher candidates were encouraged to contribute to the development of a course listing of apps for future use by categorizing apps under the components of literacy and publicly sharing their app evaluations using the class rating system.

Writing Applications

Two writing applications quickly became favorites among the teacher candidates and students participating in tutoring sessions. The award-winning *Toontastic* (Launchpad Toys, 2013), a storytelling app allowed students to create their own animated stories utilizing a user-friendly cartoon format. Students worked through the elements of a good narrative using a story arc, similar to a story map, which included setup, conflict, challenge, climax, and problem resolution.

The pre-service educators used the story arc to introduce story elements and develop oral stories using the visual animations provided in the app's clip art library. Students selected a background setting from a group provided in the app or created a background image of their own. Once the setting was established, students added story characters by clicking and dragging images from the app library to the background. *Toontastic* allowed students to move the characters around on the background as they recorded narration. Following recording, each student viewed his movie-like product while hearing his own voice describe the action. Afterward, the teacher candidates assisted their students in reviewing the oral stories to develop them into written pieces.

Teacher candidates found that the *Toontastic* stories were rich in detail and more organized than baseline writing samples. Although the app is geared toward elementary level students, older children may find it useful as a quick, creative pre-writing exercise. The most reported challenge in using *Toontastic* among the elementary students related to the limits of the animation function in the app. Students wanted to make story characters move more naturally and change direction on the screen more easily. Without a doubt, *Toontastic* was motivational and the price (free) made it a viable writing app for use in the clinic.

StoryKit (International Children's Digital Library Foundation, 2013), another free app, was recommended to the clinic faculty by a colleague who had used the writing tool with a multiage group of youngsters learning English during a study abroad program. The app's versatility in a multilingual setting was also evident during tutoring sessions. *StoryKit* was designed at the University of Maryland's Human-Computer Interaction Lab by an intergenerational design group of children and adults to determine if they could create storybooks on mobile devices (Quinn, Bederson, Bonsignore, & Druin, 2009). *StoryKit* offers students an opportunity to

edit traditional tales and create their own stories by uploading images, drawing illustrations and adding text.

The *StoryKit* app opens with a bookshelf that includes several children's classic tales that students may read orally and record or edit by adding images, illustrations and text. By clicking the edit button, students are able to choose from multiple colors and sizes of "paintbrushes" to illustrate and modify the stories. In addition, the app provides students with an opportunity to create a new book by writing and illustrating their own text. The new book option begins with a blank page bordered by simply illustrated buttons for selecting images, taking photos, adding text, painting and audio recording. Students easily navigate the app as they develop multimedia eBooks.

Teacher candidates working in the clinic setting particularly enjoyed the ease of loading images into the writing space to serve as a catalyst for developing stories. Students recorded narration for their own stories and listened to their readings to improve reading fluency. The audio recording feature was highly motivational and students often requested to reread their creations to improve their own oral reading performance. The only drawback to using *StoryKit* reported by the pre-service educators and students was the need for more time to create projects during the tutoring session.

Challenges

Although ample iPad resources and writing apps are available to all teacher candidate – student pairs in this model, there may be some challenges in implementing instructional activities in the clinic setting. Initially, university faculty may be extremely enthusiastic about using iPad technology and therefore, assume that pre-service educators will be thrilled to have an iPad for use during the semester at no cost. Instructors may have a fascination with all things technological, but this may not be the case for teacher candidates. In recent clinics, several candidates have reported feeling extremely anxious about using the iPad in their instruction and one student would borrow a classmate's iPad during tutoring sessions to avoid downloading recommended apps. Faculty must be prepared to offer incentives for iPad use for some candidates as well as additional work sessions for demonstrating how to use the technology with novice users.

Teacher candidates, like faculty instructors, need time to experiment with the iPad prior to using it in the tutoring setting. This time is difficult to find in the normal class period. Encouraging pre-service educators to gather independently for "iPad for fun" sessions can be effective in increasing the number and types of apps used in instruction as well as in enhancing candidate

confidence when using the iPad with their students during tutoring.

Some challenges may arise when working with apps for instruction. Faculty cannot assume that teacher candidates will know how to look for appropriate apps and download them to the iPad. Parameters for the types of apps to be used in the clinic setting need to be established. Faculty should consider whether funding is available for purchasing apps or if only free apps will be used for course activities. One particular challenge to consider related to writing apps is how student work can be shared. In some apps, like *StoryKit*, writing can be uploaded and a link emailed to students or their classroom teachers for viewing. Teachers can post published pieces created in *Toontastic* on the app's ToonTube for viewing.

Initially pre-service educators perceived this type of publication as advantageous since parents and classroom teachers would be able to view products created during the tutoring sessions. However, a question regarding the types of photographs used in the student texts was raised. Faculty and pre-service tutors need to consider privacy issues when distributing student creations. School district privacy procedures and parental permission for photographing children must be considered in the creation and publication of student work. For this reason, tutors converted some students' finished pieces into Word documents or *Instagram* images (another app) for printing rather than using on-line distribution methods.

Privacy issues must also be considered as teacher candidates prepare to turn in their devices at the end of the semester. Faculty must ensure that iPad devices are cleaned of all student work as well as any personal information downloaded onto the iPads by the pre-service educators. Often university technology departments can be instrumental in ensuring that the iPads are stripped and prepared for future use. Faculty should remind candidates that apps they purchased are available in their iTunes account, but will be removed from the iPad they used during the course. Accountability measures for returning devices in working order articulated in the syllabus at the beginning of the semester should be followed as the iPads are returned.

Extending the Clinic Model into Classrooms

The iPad model used for writing instruction was designed for use in an individualized tutoring program in a one-on-one setting. How might this model transfer into the typical classroom? First, classroom teachers should determine periods within the instructional day when they can meet individually with a student to work on writing activities. Individualized iPad activities can fit nicely into an established writing workshop format during individual conferencing or small group mini-lesson sessions.

Mini-lessons and conferences that focus on brainstorming, composing and revision provide excellent settings for working in partnership with young authors. The partnering approach to instruction requires classroom educators to work collaboratively with their students as co-learners, rather than in a role as the director of student learning (Prensky, 2010). This pedagogical approach allows students to take charge of portions of the writing lesson where they are able to demonstrate expertise. During writing instruction using the *Toontastic* and *StoryKit* apps, students are able to take the lead in capturing images that support story development, creating rich storylines using a story arc, revising and editing work and recording narration. The publication features available in the writing apps allow students to share their finished products with family, friends and the broader community.

Examples from Clinic to Classroom

Clinic environments offer university faculty many opportunities to observe individualized iPad writing lessons in progress. As instructors monitor tutoring sessions, they also have the ability to "dip in" to teaching settings to provide advice and model best practices. One such observation of a second grade reader named Mia (pseudonym) offered an opportunity to see iPad instruction combined with a paper-based writing activity. Mia, a student who had great difficulty recording her thoughts on paper was very interested in telling stories to her tutor. She used her strong oral language facility as a means for avoiding the writing tasks presented during tutoring sessions. Her tutor hypothesized that using the *Toontastic* story arc would provide structure for Mia's elaborate, but often disorganized oral tales.

At the beginning of the next tutoring session, the pre-service educator told Mia that she would be using a new iPad app to retell a story shared at the previous session. Mia was excited to try *Toontastic*. She selected a blank page and used the illustration tools to create a park with several trees in the background. Mia added a horse, princess and several other characters to her background and recorded the story animation, one story element at a time. In the next session, the tutor asked Mia to view her story and explained that a book was just an oral story put in print. She asked Mia to listen to and repeat the first sentence in her story. She assisted Mia in recording her sentence, sharing the pen as they worked through words with unknown spellings. The tutor was able to complete one or two sentences of the story each session resulting in a final handwritten book that Mia was able to read to her entire class. The iPad app gave Mia the necessary structure to organize her work and motivated her to continue transferring her ideas into a written piece. The positive feedback from her classmates further encouraged her to record her stories in a print format.

Mia was not the only iPad success story in the clinic setting. Another student was having sig-

nificant difficulty with fluent reading. His pre-service tutor used the *StoryKit* app to develop a simple story that included a variety of punctuation to encourage reading with expression. David and his tutor opened the *StoryKit* app and selected the new book feature. They decided to create a conversation between two characters that showed emotional responses similar to those from a book they read in an earlier tutoring session. David and the pre-service educator took photographs of each other with the iPad camera to represent facial expressions that matched their text. David thought carefully about how the punctuation marks would influence his oral reading and the emotion expressed by each sentence. Once the text and illustrations were in place, David and his tutor took turns reading the conversation using appropriate phrasing and expression. David loved listening to the story over and over again. He was determined to make the story sound perfect. Through this activity, he gained confidence in his ability to use punctuation correctly and experience in reading with expression. David's tutor shared his story with the classroom teacher by forwarding the private web address created by the app in an email. David was very proud when his classmates and parents were able to see the eBook he made during his tutoring sessions.

Your Turn

How can you adopt iPad writing techniques and apps into your writing lessons in the future? First, teachers and pre-service educators must establish an objective for instruction and determine whether use of iPad technology is the most effective means of meeting the learning goal. When iPad technology meets a teacher's instructional needs, she should think about organizing the physical arrangement of the classroom to offer one-on-one or small group instructional opportunities. Classroom arrangements that allow students to face a screen to view iPad apps displayed using a projection system are ideal for sharing writing activities.

After establishing a clearly defined learning objective, it is time to research iPad apps that will assist in achieving the instructional goal. Use reputable resources to identify quality apps and test them prior to the classroom introduction. Plan to spend more time experimenting and evaluating apps than expected. Educators do not have to know every detail about an app's features, but should have a working knowledge of the app to assist students in getting started. In the partnering approach, students will often discover new ways to use an app to support learning which they can share with their instructor.

Once an educator models an app with the student(s), he should provide ample time for practice with teacher support. As students gain experience with an app, they become more independent and are often able to go beyond teacher expectations. When students complete their

writing, teachers need to introduce methods for sharing work with a broader audience. Classroom teachers should consult with building administrators to ensure publication procedures are in compliance with school privacy policies. Students value writing for real audiences and real purposes and therefore, benefit from sharing their efforts with a wide group of readers.

Concluding Thoughts

Incorporating iPad technology in clinic or classroom writing instruction requires prior planning, careful consideration of learning objectives and commitment on the part of educators to reviewing apps for effective use. As McLuhan and Fiore noted in *The Medium is the Massage: An Inventory of Effects* (2011), "Our time is a time for crossing barriers, for erasing old categories—for probing around" (p.11). With a commitment to reflective practice during iPad implementation and a partnering approach to instruction, teacher candidates and classroom educators will find that iPad technology offers many affordances for writing instruction.

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Resources

Links for Information on Writing Apps
International Children's Digital Library - http://en.childrenslibrary.org/index.shtml
StoryKit - https://itunes.apple.com/app/storykit/id329374595?mt=8
Toontastic - http://launchpadtoys.com/toontastic/
Toontastic Media Kit (shows images and videos) - http://launchpadtoys.com/news/media-kit/
Links for Information on Quality Educational Apps
Children's Technology Review - http://childrenstech.com/
Parent's Choice: Children's Media and Toy Reviews - http://www.parents-choice.org/award.cfm?thePage=mobile&p_code=p_sof

Kathy Schrock's Bloomin' Apps - http://www.schrockguide.net/bloomin-apps.html
Current research notes that educators consistently rate the importance of using ICTs with students as greater than their actual frequency of use in the classroom (Hutchinson & Reinking, 2011).

In-service Teacher Methods Courses

Chapter 5

Fostering Student Writing-to-Learn through App Affordances

Richard Beach
University of Minnesota, USA

David O'Brien,
University of Minnesota, USA

In a science class, a pair of 5th grade students are collaboratively writing down evidence supporting their claim that the cause of dinosaur extinction was a giant volcanic eruption creating a massive dust storm that killed the dinosaurs (Beach & O'Brien, 2012; Castek & Beach, 2013). They then use this written evidence to generate a script for a production using the VoiceThread screencasting app for iPads or Chromebooks in which they use images of a volcanic eruption and dying dinosaurs, accompanied by commentary annotations about the images. In creating their VoiceThread production, they collaboratively build off of each other's descriptions of and doodling on the images, followed by sharing their productions with their peers. This use of the VoiceThread app illustrates how apps on tablet devices serve to foster writing-to-learn in ways that engage students in collaborative, multimodal productions, the focus of this chapter.

Uses of Tablet Devices and Apps to Foster Writing to Learn

The use of tablet devices and apps has increased dramatically in the past two years. One survey study of teachers' and students' uses of iPads in a British school for students ages 11 - 18 that included student interviews indicated that 80% of teachers were using iPads for at least one lesson and 71% of students used iPads for completing homework. iPads were most frequently used for conducting online research, mind-mapping, and making presentations. Sixty-nine percent of students and 67% of teachers indicated that students were more motivated to learn using iPads because they could work more effectively, efficiently, and collaboratively using the iPads than without iPads (Heinrich, 2012). At the same time, students indicated that they wished they could use their iPads even more for viewing and producing videos, participating in and designing games, writing essays and stories, and reading online books.

Given this increased use of tablets and apps, one of the major challenges facing preservice and inservice teachers is how to effectively integrate uses of tablets and accompanying apps into instruction in ways that foster learning. Effective implementation means going beyond simply adopting an app without thinking about how that app can be used to foster or mediate certain kinds of desired learning; for example, how apps can support writing-to-learn. Adopting a Technological Pedagogical And Content Knowledge (TPACK) framework (Mishra & Koehler, 2006) accentuates the need to consider, in concert, teacher knowledge of the technological features of apps, pedagogical knowledge of effective instruction and learning, and the content knowledge students need to acquire.

One approach for thinking about how to meld these three factors together in planning instruction involves the concept of app affordances. By app affordances, we mean identifying how a particular app, given its features defined through design or use in specific learning contexts, mediates learning (pedagogical knowledge) and supports the acquisition of certain disciplinary literacies (literate practices supporting the learning of content knowledge) (Beach & O'Brien, 2012; Castek & Beach, 2013). Hence, these affordances do not simply reside "in" an app; rather, they are enacted through instructional activities in which learning is mediated by the app-in-use to achieve specific learning objectives. In this conception, the same app could present different affordances in different instructional settings and a particular lesson could bring out affordances of an app that other lessons might not.

For example, a study of 4th graders' use of the Doodle Buddy app for collaboratively creating visual illustrations of their literary reading found that visualizing the meaning of the text through the students' illustrations improved their understanding of the text; constructing their illustrations required them to re-read the text to capture its intended meaning (Hutchinson, Beschorner, & Schmidt, 2013). The Doodle Buddy app affordance, enabling the drawing and sharing of visuals, supported students working collaboratively to create illustrations that reflected their inferences about text meanings. Similarly, digital mapping apps such as Popplet Lite or Mindmeister afford the visual representation of concepts or topics contained in boxes or circles that allow users to draw lines to represent the logical relationships between these concepts or topics. These affordances involve the use of visual learning to foster use of specific disciplinary literacies—for example, the ability to understand causal relationships between events in history.

How Do I Do It?

Fostering app affordances of collaboration, multimodality, and shared productivity.

In this section, we illustrate the application of the TPACK model when using two annotation apps, Diigo and DocAS, as well as the previously mentioned screencasting app, VoiceThread, by middle school students engaged in writing-to-learn in science. These apps enable affordances that support the third component involved in TPACK planning—acquiring subject matter content knowledge.

Understanding and applying this TPACK model can be useful for working with preservice and inservice teachers to help them plan activities that successfully mesh the use of technology with pedagogy and content learning. The use of these app affordances involves learning to employ disciplinary literacies associated with writing-to-learn within a particular discipline--in this case, science. Central to writing-to-learn in science is the ability to formulate claims and support those claims with evidence, an emphasis on reading and writing of argumentative texts in the Common Core State Standards (Council of Chief State School Officers and the National Governors Association, 2010).

Annotation apps for writing-to-learn in science enable the creation of annotations to synthesize key ideas in science reports. Joseph Harris (2006) describes this synthesizing as "forwarding" others' ideas and positions through "borrowing: What you draw on, terms or ideas from other writers to use in thinking through your subject" (p. 39) and "authorizing: When you invoke the expertise or status of another writer to support your thinking" (p. 39). By linking to others' ideas, students are also "extending: When you put your own spin on the terms of concepts that you take from other texts" (p. 39).

Diigo is a social bookmarking tool that includes an iOS and Chrome OS app for use on iPads and Chromebooks, respectively. Students can use Diigo to bookmark websites to save and share with their entire class or groups within a class; they can also clip or highlight online texts, and then add sticky-note annotations to that text to share with the class or other groups.

Hence, students can use the Diigo sticky-notes to mediate Harris's (2006) "forwarding" practice for creating annotations about a text that appear as attached notes on a text so that students can to respond collaboratively to each other's sticky-note annotations. When students collaboratively discuss and analyze texts through the use of these shared sticky-note annotations, they are exposed to different alternative claims and evidence essential to writing-to-learn in science, in contrast to simple practice involved in writing on their own (Moore & MacArthur, 2012).

Similarly, DocAS, an iOS app, can be used to highlight and handwrite or type annotations using different colors directly onto PDF files. The app affordance of sticky notes mediates collaborative exploration of claims and counterclaims. Students also use annotations created with Diigo or DocAS as collaborative prewriting to generate ideas and information for writing essays.

VoiceThread includes an iOS and Chrome OS app that affords students or adults the opportunity to share audio and written annotations in response to images or short video clips. Students can import images from sites such as Flickr or clips into a virtual frame and then click on a record button to add their audio annotations or write their annotations, creating a VoiceThread production for sharing online. On their screens, students perceive and click on avatar icons to listen to or read their annotations, providing them, as with Diigo and DocAS, exposure to alternative claims and counter-claims about an image or video clip.

Diigo, DocAS, and VoiceThread App affordances of collaboration, multimodality, and shared productivity.

The Diigo, DocAS, and VoiceThread app affordances' of collaboration, multimodality, and shared productivity serve to mediate students' inquiry-based science learning (Beach & O'Brien, 2012; Castek & Beach, 2013). Specifically, these app affordances support students' writing to learn in science by fostering use of science disciplinary literacies of collecting evidence to support or refute claims, observing and responding to images/data, and presenting information multimodally. Preparing for writing about certain phenomena requires that students read informational texts to acquire and synthesize supporting evidence for their essays, as well as summarize key ideas from their reading and share those ideas with their peers.

These apps help students work *collaboratively* by focusing their attention on particular sections of texts. When students highlight and add sticky notes to a section of a text using Diigo, their peers, curious about what is contained in the sticky note annotation, after clicking on the note craft a response to their peers' annotation.

To foster this collaboration, teachers or students can create their own Diigo class groups for sharing bookmarks to relevant articles—groups consisting of the entire class or subgroups within a class. And teachers and students can subscribe to various established Diigo groups for sharing bookmarks and then receiving links to articles in their email boxes.

The fact that these apps serve to focus different students' attention on the same text or image/

clip means that different students can share alternative perspectives and response strategies about those texts or images/clips. In a study of pairs of students reading and responding to the same text, researchers found that while one student focused on gathering information as the "thoughtful gatherer," the other student focused more on summarizing that information as the "aesthetic summarizer" (Coiro, Castek, & Guzniczak, 2011). Through this collaborative sharing, students and their peers model different, complementary ways of reading, which results in each student acquiring alternate ways of reading from peers.

Similarly, the use of VoiceThread fosters collaborative construction of audio or written annotations by differentially drawing students' attention on the same images or video clips. Students are aware of the varying contributions from peers and the fact that different people are collaboratively constructing the meaning of the same image or clip, often generating distinctive alternative interpretations of the same images or clips.

These apps also include *multimodal* features associated with the use of the iPad audio/video recording and touch drawing capabilities involving visual learning. The use of the sticky-note feature in Diigo not only affords writing but presents a visual feature that itself may entice students to click on the sticky-note to read their peers' annotations. The use of multimodal features in DocAS that enable drawing or handwritten annotations in different colors may also appeal to students. Since VoiceThread enables the creation of visual presentations with audio annotations, students seamlessly engage in multimodal participation through integrating visual and audio modes of communication.

And, these apps foster *shared productivity* of work for online sharing with peers, teachers, and other adult audiences. For example, in addition to VoiceThread, teachers can have students use screencasting apps such as ExplainEverything, ShowMe, ScreenChomp, or Educreations to create presentations or tutorials on topics of interest to other students. Students can use ExplainEverything to create how-to video demonstrations that they then store on their tablets for sharing with audiences.

Viewing each other's work creates a sense of audience and rhetorical purpose. Students have an incentive not only to engage an immediate, inquisitive audience, but to also convince the audience of the validity of the claims stated or implied in their productions. Preservice teachers expressed positive perceptions about the use of VoiceThread for creating presentations of their literacy lessons to their class because it provided them with a sense of their peers as audience for their presentations (Smith & Dobson, 2011).

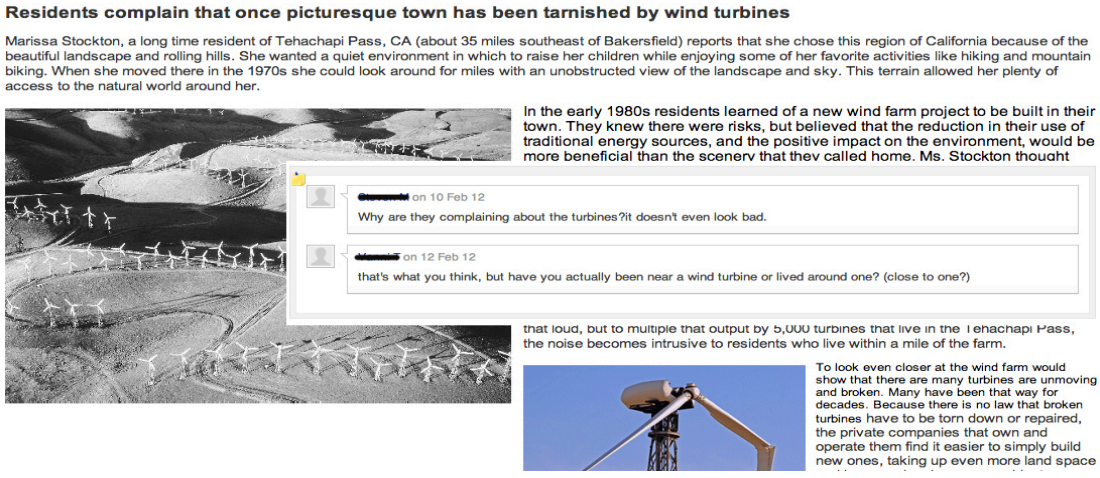
Classroom Example: Middle School Students' Use Of Annotation Apps For Writing To Learn In Science

To illustrate the use of annotation apps to foster writing to learn in science, we describe examples from a 7th grade and a 5th grade classroom located in an urban Oakland, California school (Beach & O'Brien, 2012; Castek & Beach, 2013). In Melanie Swandby's 7th grade science class at the Lighthouse Community Charter School in Oakland, California, students were studying issues related to the use of alternative energy, focusing on the pros and cons of the use of energy generated from wind turbines. To prepare for writing a position paper expressing their support or concerns about the use of wind turbines, students were given two essays—one promoting the positive benefits of wind turbines and one positing that wind turbines are not cost effective; they were also given additional information regarding the pros and cons of use of wind turbines to supplement the information in these two essays.

Students' use of the Diigo app.

Students then used the Diigo app with their iPads to highlight and share their sticky-note annotations in response to these two essays. In their annotations, they posed questions about the essay topics leading other students' to respond to those questions, responses that generated material for their own essays. As illustrated in Figure 1 below, one student posed the question: "Why are they complaining about the turbines? It doesn't even look bad." Another student responded by noting: "that's what you think, but have you actually been near a wind turbine or lived around one? (close to one?)," generating a collaborative exchange fostered through uses of the sticky notes (Beach & O'Brien, 2012, p. 139).

Students' Uses of Diigo Sticky Note Annotations



As previously noted in describing Diigo, the fact that students could target their annotations to a specific line in the text served to collaboratively focus their attention on specific information in the text for posing and answering questions related to competing claims.

Students were later given the two essays in PDF form for adding annotations using the DocAS app. In contrast to the Diigo app, they could use the DocAS app to highlight text and then handwrite or type their annotations in different colors onto the PDFs. For example, in response to the essay noting that some of the turbines were broken, one student posed the question "Why don't they take the broken windmills down?" identifying a problem with the use of wind turbines when they were not removed (Beach & O'Brien, 2012, p. 142).

Once students shared their annotations, they wrote their summary essays. In writing these essays, student drew on each other's annotations to formulate and challenge alternative arguments, resulting in essays that cited and refuted competing, pro-con claims and perspectives on the value of wind turbines. For example, in a DocAS annotation, one student noted "the wind turbines should've never been built there because it makes the beautiful landscape unattractive and it only powers 1% of the CA population, which is about 350,000 people" (Beach & O'Brien, 2012, p. 144). In his final essay, that student then drew on his own and others' annotations to examine both the pro and con perspectives:

> Everything has something bad about it, wind energy is renewable but sometimes it is a waste of energy. In my opinion, it's a bad thing because if one of the wind turbines is broken, there's no law for that company to fix them. Yes, some people might say it's renewable and causes no pollution. Wind energy has some things that are good about it but overall it's a waste of space and money to build. (p. 144)

In his essay, this student draws on other students' annotations related to positive effects of wind turbines—that they are used to create renewable, non-polluting energy, while at the same time drawing on his own and their annotations to charge that wind turbine are not cost-effective.

In using the Diigo and DocAS apps, the students were therefore exploiting the app affordances of collaboration through sharing of annotations; using multimodality through visual features of highlighting, targeted sticky-note referents, and handwriting in different colors to create annotations; and public sharing of annotations with their classroom peers.

Students' uses of the VoiceThread app.

As illustrated in the opening vignette, pairs of students in Laura Kretschmar's 5th grade classes, also at the Lighthouse Community Charter School, used the VoiceThread app to generate productions portraying their arguments about whether the extinction of the dinosaurs was caused by an exploding supernova star, a volcanic eruption, or an asteroid. After selecting one of these causes and reading an essay promoting that cause, students wrote down claims and evidences for those claims. They then selected images, wrote some scripts, and added audio annotations to formulating arguments and evidence supporting their preferred explanation as the primary cause for the dinosaur extinction. Students also viewed each other's VoiceThreads, which exposed them to competing explanations, explanations they represented in their production to refute those explanations in favor of their own explanation.

For example, two students argued that volcanoes were the primary cause of the dinosaur extinction, using an image of a volcano to illustrate their position (http://voicethread.com/share/2454743):

> Volcanic eruptions caused dinosaur extinction because dust and ash went to the atmosphere which made the temperatures go down and the dinosaurs couldn't survive, further evidence that a volcanic eruption happened sixty-five million years ago. What caused extinction was a layer of iridium. The iridium came from the dust and air. (Beach & O'Brien, 2012, p. 245)

The students took advantage of the collaboration affordance of the VoiceThread app by focusing each member of the students' paired groups on the same image for formulating their annotations. The affordance of the multimodal combination of images with audio annotations served to engage students in thinking about the relationship between their use of certain images to illustrate their ideas, their previous writing of claims/evidence and a script, and their audio production of annotations. Further, through public sharing of their productions, students could view each other's VoiceThreads to acquire knowledge of their peers' alternative arguments. Finally, knowing that they would be sharing their VoiceThread with parents and the community at a school exposition event motivated them to do well in creating their productions (for examples: http://sites.google.com/site/kretschmarexpo2011).

Your Turn: Preservice and Inservice Teachers Employ Apps Affordances to Create Engaging Writing Activities

A key component of technology integration is the teacher's experience and comfort in using certain tools. Preservice and inservice teachers are more likely to employ technology tools in the own classrooms when they have ample opportunities to use these tools in methods courses. In doing so they become familiar with and develop comfort in using tools for their own purposes, leading them to perceive the value of the tools for use in their own teaching.

Using Diigo to share links and annotations.

In Beach's digital writing and media literacy methods and O'Brien's digital reading courses for English education preservice/inservice teachers, we found that the use of Diigo annotation apps served as a valuable resource for acquiring writing-to-learn teaching strategies. We each set up a Diigo "group" consisting of just students in the class so that when students find useful online resources relevant to topics in these courses, they then share bookmarks to that class Diigo group. Students would then receive links to useful resources in their email, sharing that fostered a sense of community in these classes. And, they can add sticky-note annotations to foster discussions about a particular resource.

In a Diigo-based assignment we designed for O'Brien's class we also explored how students enacted the process of critical reading like a writer, using, in this case, Pearson and Tierney's (1984), *On Becoming a Thoughtful Reader: Learning to Read Like a Writer.* After reading this text, students posted their annotations on Diigo. We then explored with the students various kinds of annotations they attached to the article and the multiple stances readers take up as they think of themselves are both critical readers and writers in a peer community.

Using VoiceThread to engage in critical analysis of media images.

In Beach's media literacy methods class, students used VoiceThread to share their critical analysis of media representations of a group or phenomenon portrayed in the media: teachers, men, women, nature, the city, the elderly, crime, adolescents, vacations, schools, love, religion, sex, sports, etc. To prepare for this assignment, students were provided with examples of critical analyses of media representations on the course wiki (http://teachingmedialiteracy.pbworks.com/MediaRepresentations). They were then asked to use VoiceThread to share their critiques the stereotypical representations along with the value assumptions inherent in media texts.

To use VoiceThread, students searched for Creative Commons images on Flickr of these media representations—which then loaded automatically into VoiceThead. They then added audio or

written commentary to their images, critiquing these representations and how the representations may influence audiences' perceptions, and shared their VoiceThreads with other students in the class.

Bridging Lessons.

In O'Brien's digital reading class, the capstone "bridging" assignment requires students to take typical literacy assignments that integrate print-based writing and reading and to design a "new literacies" version of the lesson with a digital multimodal transformation. Students explain how the transformation improved upon the print-centric traditional version based on specific affordances. One group showed how the writing of a "where I'm from" poem, usually handwritten or composed using a word processor was enhanced by juxtaposing the poem's textual components with images representing a person's life in iMovie, noting the affordances of lifecourse images in what they called a "digital montage" poem. Other students focused on using multimodal writing-to-learn by transforming textbook assignments usually followed by versions of report writing into assignments linking a core history text to web pages with multimodal elaborations of persons and events that included intertextual/intermedial compositions as reactions to the multimodal representations of the persons and events. The bridging assignment produces almost limitless possibilities with the requirement that students, through the rubric in the assignment, be able to show that they did more pedagogically than than simply making something that seemed more engaging than the traditional print-only lesson.

Multimodality.

To exploit the app affordance of multimodality in planning writing activities, teachers can have students reflect on their choice of certain images or video clips they are incorporating into their writing in terms the how the semiotic meanings of those images or clips serve to illustrate or convey their intended idea or message, as well as whether their audiences will readily grasp the intertextual meanings associated with certain images or clips (Kress, 2003). For example, in creating a video PSA on texting and driving, students need to consider whether their selection of particular images of students texting or car accidents related to texting to embed in their PSA video effectively illustrate or convey their intended rhetorical uptake given their peer audience.

Shared productivity.

In planning activities, teachers also need to provide students with opportunities to readily share their writing with both local, immediate audiences as well as audiences outside of their school, sharing that enhances their sense of purpose and audience. To do so, teachers can create class websites using Weebly or Google Sites for sharing links to student work, for example, their VoiceThread productions.

Based on these different affordances, for their assignments, teachers can then formulate criteria or rubrics related to use of the different affordances. For example, for evaluating students use of the affordance of multimodality, teachers can formulate criteria related to students' selection of images or video that effectively convey one's intended message consistent with the Common Core writing standard, "Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate and cite the information while avoiding plagiarism" (Council of Chief State School Officers and the National Governors Association, 2010, p. 15).

For providing feedback, they can use the Showbie app (http://tinyurl.com/ac2c3bl) for collecting, sharing, and annotating student work (http://www.showbie.com). One advantage of the Showbie app is that it organizes student work by student name, assignment, and class for ready access by teachers and students.

To learn more about the uses of apps to support writing to learn, we recommend accessing professional development resources cited in this book's website and on our wiki, http://usingipads.pbworks.com, for example, app recommendation sites and podcasts about uses of apps in the classroom.

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Chapter 6

Virtual worlds, videogames and writing instruction: Exploring games-based writing practices across content areas

Hannah Gerber
Sam Houston State University, USA

Debra Price
Sam Houston State University, USA

"Today I began asking my students about gaming and their experiences with it, and, as always happens in teaching, it led to intense, amazing class discussions. In my junior level English class, the kids who sleep, go to SAC (in school suspension), are failing, and yet all very smart, suddenly perked up. I heard more from them today than I have in four months! One student of mine stayed during lunch, telling me all about the way he feels about gaming, how [he] reads 30 page essays on it on tumbler (sic) and subscribes to RSS] feeds, and all kinds of stuff. He has never done that before. He is also going to e-mail me a lot of info. It was so great to see him speak intelligently and confidently using argument in a class discussion. I was blown away, because he usually says NOTHING. This kid had a 67% last semester and I have been trying to find ways to motivate him. I think this was the breakthrough we needed."

-High school teacher, doctoral student, believer in games-based learning.

We see from the quote, that videogames can be harnessed to interest students in learning as well as in developing an awareness of their learning. While research suggests that students do not see the validity of their gaming as it relates to and connects with school learning (Abrams, Gerber, & Burgess, 2012; Gerber, 2008), the above quote indicates that if allowed, students can and want to bring their rich gaming experiences into the classroom. If students are allowed to merge their passions and interests in gaming with mandated school objectives and standards, then the in-school and out-of-school dichotomy that surrounds conversations within academic communities on technologies in the classroom can become blurred and students can begin to understand the connections among their varied literacy practices across domains,

subjects, and experiences, and the breakthroughs we are looking to reach with our students can begin to occur with greater regularity.

Purpose and Research Base

The videogame, as a pedagogical tool, is quickly emerging in the field and becoming recognized by researchers and teachers as a valid literacy practice. This is important to consider, as recent studies suggest that over 97% of today's youth play videogames (Lenhart, et al. 2008), and videogames encourage youth to engage in a variety of writing practices related to their videogame experiences (Gerber, 2008; Gerber & Price, 2011; Martin & Steinkuhler, 2011). Videogames serve as an excellent schema building tool (Abrams, 2009; Gee & Hayes, 2011; Gerber, 2009) and as such, can provide teachers with the fuel needed to spark students' interest in subject areas often resisted in the classroom: reading and writing.

If youth are engaging in videogames on a regular basis, as the research suggests they are, and if the engagement in gaming is connected to youth literacy and writing practices across multiple domains, as also suggested in the research, then the field needs to develop methods to help harness game-based experiences and bring them into the writing classroom to engage students who may already be gamers. Note, however, that these ideas are suggested to help encourage students who have affinities towards gaming to tap into those affinities to engage in writing, not necessarily that these would be used to engage students who do not enjoy gaming. This type of teaching and learning must be done in a manner that will allow teachers to meet the Common Core Standards, as well as give youth the opportunity to have their games-based writing practices validated without completely schoolifying their experiences. These spaces exist because people *choose* to take part in them; youth often are among those groups who elect to take part in these literacy practices, however, incorporating and inviting these spaces (and the validation of these spaces) into the classroom can be done, as evidenced by the opening vignette. It just must be done in a manner that does not force students into taking part in game play and gaming activities at the expense of the enjoyment that they feel for these environments, or we risk alienating students even more. Through speaking with multiple teachers, as well as analyzing lesson ideas and conceptual papers on videogames and learning, we have determined that teachers are most comfortable with the integration of games as a schema-builder for literacy activities (called games-based learning, which is different than gamification), when it closely reflects literacy activities with which they are familiar (Gerber & Price, 2013). One of the easiest adoptions to make, is games-based writing.

We are defining games-based writing activities as those activities that gamers engage in as a

result of videogame experiences (writing of fanfiction, machinima, walkthroughs, blogs, wikis, etc.). The texts that surround main commercial or trade texts of any sort (whether textbooks, novels, or videogames) are referred to as paratexts. Paratexts are resources, or additional sources, that are created to act as complements and resources to the main commercial text. Paratexts, initially, were created by the games' publishers as ancillary and supporting texts for the main text, but with the advent of fan-driven spaces, many fan created paratexts and fan driven paratext communities have begun to emerge. Consalvo (2007) posits that paratexts are a vital part of the gaming community and are used by gamers across a variety of styles of play/genres (first person shooters, role playing games, massively multiplayer games, etc) to gain varying degrees of success within the game they are playing (and with varying degrees of how much they feel these paratexts should be used to gain advantage in videogame environments. Others have noted how teachers take up using paratexts for literacy experiences in the classroom, and posit that paratexts are one of the easier ways to bring games-based learning into literacy classrooms (Apperley, 2012; Gerber & Price, 2013).

This chapter's foundation is based on research from a study of in-service teachers enrolled in a graduate class on videogames, virtual worlds and game-based writing. We analyzed discussions, teacher's lesson critiques, and conceptual papers about games-based writing within middle and secondary classrooms. This chapter provides resources and ideas for teacher educators to adapt (both in-service and pre-service teacher education) in order to harness these media for classroom instruction. The focus on a variety of ways that commercial off the shelf (COTS) videogames and their paratexts can be integrated into writing instruction will provide teacher educators (and practicing classroom teachers) a snapshot into what writing activities and engagement might look like in future classrooms. Rather than giving a specific detailed explanation for how a teacher educator should enact this type of learning in the classroom, we provide a snapshot of what the lesson might look in a middle or secondary classroom, in order to provide the teacher educator the opportunity to adapt the lesson to his or her needs. Specific examples of what each of the types of games-based paratext writing looks like (machinima, fanfiction, or walkthroughs) are located by investigating the links contained within each discussion, rather than including specific examples within this chapter. This allows for a broader, more comprehensive view of the methods and a more manageable chapter to read.

Games-Based Writing Across the Curriculum

Games-based writing is a multi-faceted term, and as such it fits in many different categories and genres. Particularly, it is important to see how games-based writing can be used across content areas, as well as within English language arts, to engage students in learning in a

variety of domains. Writing is done for a variety of purposes and for multiple audiences and students must become familiar with the audience and the purpose for which they are writing. There is persuasive writing, narrative writing, and expository writing to name a few different purposes that are widely focused on in middle and secondary curricula. Each one of these specific purposes means that writers address different audiences who expect different content. Games-based writing is no different in regards to this purpose. There are several popular forms of games-based writing that marry well with engaging students in writing activities within particular content areas. In order to adopt and use games-based writing in multiple classroom environments, teachers must first develop an understanding of the various types of game-related writing and their various connections to multiple content areas.

Fanfiction and The English Language Arts Connection

Fanfiction is a form of narrative writing that provides writers a space in which to engage in the writing process with a community of fellow writers. Fanfiction sites are affinity spaces: spaces and sites where writers belong to groups interested in the same novels, movies, videogames, and other popular media. Within these fanfiction sites, writers offer critique, support, and feedback on one's writing (Black, 2008; Lammers, 2011). Popular websites, such as Fanfiction.net offer a space for writers to join communities of writers who are writing about the same novels or videogames and allow them to develop their writing through peer critique and feedback. A simple glance at www.fanfiction.net shows that writers select the medium they are writing about, (such as books, videogames, movies, cartoons, and television shows just to name a few). Once writers have selected the media from which they plan to base their fanfiction on, they can see if their particular title is available. An example might be a writer who is writing a fanfiction story about *Harry Potter*. The writer would select the "Books" category, and once he/she has selected that category, he/she would check to see if *Harry Potter* is represented. If so, then the writer would be able to begin writing a *Harry Potter* based/themed story. If Harry *Potter* does not exist, then that writer would need to create a group for *Harry Potter* based/themed stories. (As of this writing, January 2013, there are 627,902 individual *Harry Potter* based/themed stories. It is one of the most written about fanfiction topics).

So how does fanfiction fit in with English language arts? Put simply, fanfiction is a form of narrative writing that fits into most English language arts curricula. The Common Core State Standards (CCSS) state that students must be able to, "Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences (Common Core State Standards, W.9-10.3)." Additionally, the CCSS also state that writers must be able to produce and distribute their writing by structuring their

writing appropriately for multiple audiences; strengthen their writing through planning, revising, editing, rewriting, trying new approaches; and distributing their writing through technology and the Internet, including producing, publishing, and updating both individual and shared (Common Core State Standards, W.9-10.4-6). Fanfiction hits on all of these standards, therefore it fits in with the CCSS and has a place in English language arts curricula. More importantly, fanfiction allows writers to belong to communities passionate about writing about the same media, this provides the student writer incentive to write, as he/she is engaging in a community of writers, rather than simply writing his/her narrative piece for the teacher.

Avatar Creation Through Fanfiction

Avatars are crucial to game play, as they are virtual representations of one's self while in the virtual environment. However, avatars do not have to be exact and true representations of the person playing, they can be augmented, have a different gender, be a different size, or have different strengths and weaknesses. In role-playing games (RPGs), such as the popular Elder Scroll Series (Bethesda Studios), of which Oblivion won Game of the Year in 2007, gamers control the design of their avatar by using the in-game programming. The creation of the avatar in an RPG goes above and beyond simply choosing the clothes, the hair, or the facial structure, rather in an RPG the gamer selects not only the external features of the avatar as just mentioned, but also dictates and creates the character traits (such as skills in negotiation, high or low intelligence, strength, agility, etc.), and determines the ratio the avatar will have of each one of those traits. The decisions that a gamer makes while creating his or her avatar are directly related to the job or mission that he or she plans to carry out while in the game.

While, creating a character sketch is at the heart of narrative writing, creating an avatar sketch is at the heart of games-based narrative writing. In narrative writing we want students to begin to draft and sketch the storylines and the characters in the stories they are planning to write before they dig into writing the story--in this case, the fanfiction they are crafting for class. Allowing students to brainstorm and list the traits that are available for them to choose from their in the game they are basing their fanfiction on, is a great place to start. Once they have the traits listed that belong to the avatar in their game, they can begin to write their rationales for why those traits are the traits that are crucial for their avatar/character. In developing and defending their choices through strongly written rationales, they can begin the process of designing and developing a stronger story (Gerber & Abrams, 2014).

Try It

The preparation that will go into the avatar creation depends on the objective for the lesson.

If you are simply looking for your students to understand characterization and character traits then it is important to start by modeling and scaffolding.

1) First, select a popular RPG game and extrapolate the traits that are available for a gamer to design with his or her avatar. A great game to start with is the game we mentioned earlier, *Oblivion.*
2) Second, by examining the game, game guides, and/or online resources, determine which traits are available for a gamer to manipulate and create when they design an avatar. Some key traits that are found in *Oblivion* are Intelligence, Strength, and Negotiation. Many other games have different traits, and additional traits. These are only three; *Oblivion* has several others.
3) Create a chart that lists the traits that you want students to develop, as well as several columns with questions that ask them to think more deeply about the traits which they are developing, such as, "How will these traits help your avatar succeed in your story?"
4) Additionally, you might also ask your students to list physical traits (hair color, height, eye color, etc.) and describe these, and describe why they choose the physical traits that they did.
5) From here, you have a detailed character sketch and can begin to ask your students to draft the avatar they have created into the fanfiction stories they are writing for your class.

Machinima and The History Connection

The word "machinima" is a portmanteau for the word machine and cinema; machinima is a form of cinematic production, including screen captures and video clips from videogame environments where a story, or dialogue, is included and then ported (voiced over) into the action. Machinima is a popular form of film creation for gamers who want a bit of creativity in their gaming experience, and who prefer the opportunity to parody the game, to change the story to fit what they would like to happen, to explain in-depth a scene/how to get through a scene. A popular website for locating and uploading machinima is www.machinima.com. On this site machinima creators have serialized stories (much like the serialized novel of the Victorian Era in the 19th Century), persuasive explanations on why a game is better than another, or parodies of current events or other games. Good machinima requires that the writer/producer of the machinima have a solid grasp of audience and purpose before they go forward in creating and writing a machinima production.

Machinima provides an excellent complement to history and integrating videogames-based writing into a history class. Currently, on the market, there exist a plethora of historical-based videogames that could provide a rich basis from which to create machinima. Students might choose to create a documentary of historical events, tell a fictionalized account of historical events, or parody a current event in politics. Not only would this require that students complete thorough research of the topic and historical time period for which they are writing/producing a machinima, but they also would need to engage in-depth in the writing process, through drafting, revising, and producing, as machinima is not something one can simply produce, but rather takes a complex amount of storyboarding and development through drafting and revising. Additionally, we see the same CCSS that were met through the writing of fanfiction as also being met through the production of machinima.

The Hero or the Villain? Persuasive Machinima in the History Class

History is never a one-sided affair: it always is constructed from multiple perspectitives. Introducing this concept to adolescents can often be a challenge; by allowing students to see a historical event through someone else's eyes allows them to view the event another way and develop both empathy and critical thinking about situations and how history is defined. Both creating and critiquing machinima allows for this nuanced, in-depth, multi-sided view to occur. In understanding that history is presented through someone else's eyes and someone else's story, it would be important to begin to address this in discussions with the class.

Some of the current COTS history-based games have deep storylines, such as the *Assassin's Creed* franchise, the *Call of Duty* franchise, and the *Uncharted* franchise, while others, such as the *Civilization* franchise and *Rise of Nations*, while steeped in history, have a less complex storyline. Depending on the approach, deep narrative storyline, or no storyline, will dictate the direction to take with this assignment. Additionally, the age-appropriateness of the games selected, depend on the age group with which one is working; this should be taken into consideration before beginning this lesson.

In introducing historical themed machinima, the teacher should first determine the objectives he or she is focusing on through this unit (time period, state standards and benchmarks, etc.), and then determine if the students are to critique an existing historical event, or recreate an event through examining another side of an history and rewriting that story from the viewpoint of the other side, while relying on evidence and resources to support this view. The students should be directed to read through a variety of positions and documents on the event, which could be provided to them by the teacher and should include both primary and sec-

ondary documents. Once the student has completed a sufficient amount of research and has enough data, he or she then begins to draft his/her argument to showcase and persuade those who will view the final created machinima. The student might choose to create a machinima production using screen captures and produce the story using machinima production software, such as with the free open source software, www.moviesandbox.net. In line with the concept of allowing writers to participate in participatory writing spaces, students should be invited to upload their machinima to a videosharing site, like YouTube, and to comment and critique one another's work.

Try it

While machinima creation can be a time-intensive process and undertaking for students, it also is rewarding and allows students to tap into a creative mindset when presenting historical information. Additionally, this allows for interdisciplinary collaboration between content areas, such as history and English language arts.

1) First, determine what historical period you want students to analyze and view from a different perspective. An example might be The American Revolution. Assassin's Creed III occurs during this time frame.
2) Provide students with resources and documents (primary and secondary) relating to the American Revolution, and assign students to examine The American Revolution from a different perspective. This might be a perspective that is different than what is taught within the textbooks.
3) Students should then be directed to write a short persuasive piece on why their view of The American Revolution is correct.
4) After this short persuasive piece is written, they should locate, or recreate through game play, several scenarios that support their position. Using a machinima software, like the one previously mentioned, they can create their production and post it to a videosharing site.

Theorycrafting and The Math Connection

Like machinima, "theorycrafting" is a portmanteau of a videogame name, *Starcraft,* (a massively multiplayer game produced by Blizzard Entertainment) and the concept "game-theory" (the analysis of multiple factors--circumstantial and general-- to determine decision making processes of individuals and groups). Theorycrafting, by definition, is complex mathematical analysis and statistical modeling of game elements and character traits conducted by gamers to determine the strategies that will lead to the most success in game play, as well as which items

and goods within a game will maximize a character's strengths (WoWiki, 2012). In massively multiplayer games, such as *World of Warcraft* (Blizzard Entertainment), gamers will analyze a character's damage per second (DPS) to see how quickly and under what conditions they can deliver damaging blows to another gamer's character so that they successfully pass on to the next level. Multiple elements and character's traits are analyzed during the theorycrafting stage to determine how effective that character will perform in a particular scenario. This allows groups of gamers to put together strong and effective teams in raids. Raids are game scenarios where a team will rush an enemy and attempt to take down that enemy relying on their various and different skills, in order to collect the goods and treasure that the enemy may have been protecting/hiding. One of the more popular sites produced by fan community for understanding and taking part in theorycrafting is www.elitistjerks.com. This website is maintained by The Elitist Jerks *World of Warcraft* guild and claims to be a site dedicated to "intelligent discussion of *World of Warcraft (WoW)* theorycrafting strategies (Elitist Jerks, np, 2012)."

So how does theorycrafting fit into writing within the discipline of math? According to Paul (2011), "theorycrafters set out to best understand the processes of the game and, in mapping procedures of the game by developing paratexts, players have created a dynamic relationship that reshapes WoW's ongoing design (np)." As such, creating paratexts surrounding theorycrafting invites gamers to conduct mathematical analyses and statistical modeling, and then to produce texts on these events for other gamers to consume and critique. Online resources, such as The Elitist Jerk forums can be used within math classes for students to both create, and add to, using their own mathematical analyses and statistical modeling, or they can be used as a jumping off point to structure persuasive arguments as to why the theory that has been crafted is not likely to succeed as the gamers have originally intended. In keeping with the trend of allowing students to write for real audiences on topics of real importance (across a variety of genres) students complete responses about the mathematical analyses that they have conducted by adding to the existing theorycrafting forums, create persuasive blogs outlining opinions and supported by their own analyses, or create a walkthrough explaining how a particular theorycraft scenairo could be completed. Additionally, we see those same CCSS as being met by fanfiction creation and machinima, as being met by the use of theorycrafting through walkthroughs and fan forums.

Theorycrafting and Walkthroughs: Expository Writing in Math Class

Theorycrafting is one of the more complex game-related tasks in massively multiplayer games, and while not all gamers take part in theorycrafting, it is a prime task to explore when looking at the various ways to bring games-based learning and games-based writing into the curric-

ulum. Walkthroughs are a unique and creative way to introduce writing into math through videogames. Walkthroughs are documents and resources (also known as paratexts) that help support gamers in their gameplay. Often referred to as game-guides, they can appear in print format or online, and act as a manual to help a gamer through difficult portions of game play. Often they provide key backstory information on players, as well as crucial information on traits and skills available to particular characters and classes of characters. The walkthrough is expository in nature, as it lists factual information and accurate descriptions for how to do tasks.

A math teacher might engage students in the analysis of a particular character's/avatar's strengths and weaknesses by reading about that character in walkthroughs and through engaging them in debate on web forums, such as The Elitist Jerks webforum. The students could then take the information they have gathered and apply it to writing a how-to walkthrough for creating the perfect team to solve and get through a particular scenario in a game, such as WoW where multiple gamers who have avatars with differing strengths are needed to complete certain raids. This walkthrough could then be posted within the WoWiki (www.wowiki.com).

Try It

Theorycrafting is an excellent way to take students from thinking about complex statistical analyses and modeling, to engaging them in writing activities that are relevant and related to popular media that many students are engaging with on a daily basis. This would be the most complex level of thinking and writing, as students would have to not only gather data, but defend the theories that they generate through both online forums and gaming interactions.

1) First, identify which MMO (Massively Multiplayer Online Role Playing Game) is going to being identified/used in the process of theorycrafting. This could be done by relying upon students' interest, or the instructor/teacher could select the game. *WoW* is a game that is popular in both the world of gaming and in theorycrafting.
2) After introducing the concepts of statistical modeling, or mathematical analysis, which are within the scope of the curriculum, instruct students to begin to dig into both the online forums dedicated to theorycrafting and the game which has been selected, as well as walkthroughs and additional resources dedicated to the game and informing the gamer about game strategies.
3) Allow students to collect data, engage in conversations with other gamers in online forums, as they begin to think through which characteristics and skills would be needed to be successful in a raid scenario.

4) After students have collected data, they are to begin to write out their theories on how the statistics of their in-game decisions should theoretical play out based on the strengths and weaknesses of the selected traits, as well as the scene/scenario in which they are suggesting that they will be performing this task/raid. They must construct this piece of writing in a thoroughly explained walkthrough, so that another gamer might be able to pick up the walkthrough and attempt to put the theory into practice and test it.

Discussion

The activities discussed throughout this chapter are meant to provide a snapshot of what these activities might look like in a middle or secondary classroom. With this in mind, teacher educators should adapt the activities to meet the needs of their pre-service and in-service teacher candidates. We feel that providing a guide for how teachers might construct these activities and assignments in their classrooms, gives teacher educators a bit of freedom in how they might adapt the assignment to meet the needs of their teacher candidates. We do, however, suggest that teacher educators provide their teacher candidates with gaming resources, and the opportunity to explore and engage in working with a variety of different gaming paratexts, along with the exploration of a variety of different games. Through this, they teacher candidates can be encouraged to adapt these lesson ideas to fit the particular content or discipline area with which they are working. As such, the particular list of game-based writing activities provided in this chapter would fit well in a content area literacy class, or a disciplinary literacy class, so that teacher candidates can work through a variety of games-based writing activities that are relevant to their classrooms and disciplines.

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Chapter 7

Engaging Teachers in Digital Products and Processes: Interview Feature Articles

Susan D. Martin
Boise State University, USA

Sherry Dismuke
Boise State University, USA

Students sit in pairs interviewing each other--talking, laughing, taking notes with pen and paper. Computers begin to appear on tables, as students segue into drafting feature articles--those splash-of-color pieces that go beyond straight news in magazines and news source. Conversation diminishes to a soft hum, as focus shifts to the interplay of thinking, written notes, and the emerging text on the computer screen. Words continue to waft over the room as comments and questions pertaining to content and processes are directed to others. Computer screens are filling up with these words…

Thus begins, the first day of writing workshop in our teacher education courses.

Overview and Purpose of the Activity

An interview feature article is the first piece that our students create for the writing portfolios they will share with others on the last day of class. Engagement with this particular genre, as well as the processes needed to create the final piece, provides rich learning opportunities for students. Interviewing a classmate and creating a feature article offers a model for an informational writing activity that is aligned with the Common Core State Standards (2010) and can be accomplished or adapted in K-12 classrooms. Composing a feature article also engages students in experiential roles as writers, as they move through planning, drafting, revision, and presentation processes. For many students, it is the first writing that they have done in years that is not an academic paper. Loosened from the constraints of academic writing, students can play with words and formatting, and consider a more public audience--other than a course instructor. Students have noted that challenges of giving voice to both the interviewee and self-as-writer serves to deepen their understandings of voice as a trait of written products. Immersion in this the genre thus brings to the forefront the dynamic processes needed to create particular qualities within written products. Additionally, interview processes tend to build levels of trust that foster rich and natural social interactions around written composition that

support burgeoning communities of writers in our courses. Students converse, share photos, and laugh with each other about personal backgrounds and interests that go well beyond the interview that we set as the instructors.

Immersing students in the processes of interview feature article writing, also presents an opportunity for us to model the critical role of the teacher in guiding and scaffolding students' engagement in writing tasks and processes. Some aspects of guidance have remained the same over several years. For example, to model the scaffolding of idea-generation processes, we still have the whole class brainstorm and generate questions about what they would like to know about their classmates before the individual teams decide what 3-5 questions they would like to ask. We continue to teach focus lessons (Routman, 1996) on creating strong leads. Other activities have changed, however, as we work to keep current with new technologies and the sweeping changes to writing in our society (Leu, 2002). Models of interviews are now available through electronic links, rather than in hard copies of articles we made for students. We no longer take photos of our students in class and have them glue hard copies onto their final products. Instead, students find photos on Face Book sites, share photos through "bumping" their smart phones, and embed photos digitally in their pieces. Additionally, expectations for complex, multi-modal products (Leu, 2002) and concomitant writing processes have become central to the modeling and guidance we offer for the interview products.

Keeping current with the ways we write and how children are/should be learning to write with new technologies is integral to these changes. We have felt a sense of urgency, especially the last two years, to prepare teachers to teach writing effectively in the digital age. This particular assignment has been a wonderful jumping-off point in our courses for us to journey in concert with our students and each other (Tyselling & Laster, in press) towards greater understandings of writing processes and written products in digital environments.

How We Do It

This activity takes place over four sessions in our courses. Typically, around half of our course time each week is devoted to writing workshop.

Session One (45-60 minutes)

In the first session, students will come prepared to class having read on-line interviews as models for the genre. We currently use an interview in Question & Answer format with Judy Blume <http://www.cynthialeitichsmith.com/lit_resources/authors/interviews/JudyBlume.html> and a narrative interview with J.K. Rowling <http://usatoday30.usatoday.com/life/

books/news/2007-07-25-jk-rowling_N.htm>. We begin by using the models to inductively identify the genre, its purposes, audiences, and key features. We compare and contrast the two formats, looking for similarities and differences, and sharing which we enjoyed more as a reader and why. The use of direct quotes is a critical key point in either format. Students record the information on their Genre Charts—a tool for them that they will add to across the semester.

Name of Genre	Purposes/Audiences	Key Features	Other

Figure 1: Genre Chart

Once we have established general characteristics of the genre, we discuss the specifics of the interviews feature articles that we will compose. We describe how they will work in partners to interview each other, their audience will be the class, and they have the option to compose in either format. We then discuss what makes a good, open-ended and probing question and together brainstorm questions that students feel their audience would like to know about classmates. The two of us typically will add in a couple of categories such as families (some of our students are parents) and "likes" if students do not mention these to help create a broad array of choices. Students then met with partners to interview each other. We let them know that they are to begin by identifying 3-5 questions that they would like to know about each other and that they are comfortable answering. We discuss the important-role of note-taking or recording conversations with smart phones or tablets, as they will be required to have direct quotes in their final products.

Session Two (45-60 minutes)

In the second session students complete their interviews with each other and move into drafting processes. At the beginning of this session, we do a very brief focus lesson (Routman, 1996) on leads—those beginning sentences that grab readers' attention. No matter which format students choose, they are expected to have a good introductory paragraph--with a strong lead. Using a range of models, we discuss and decompose (Grossman et al. 2009) what is entailed in a good lead. Specific tools for constructing strong leads, such as right branching sentences (Clark, 2008), are described.

We also review the features of each interview format as students begin to move into drafting. Bringing forth the voice of the interviewee and how to balance that with the voice of the writer

is an interesting point to discuss at this time.

Writing up interview notes into a feature article is a perfect activity for us to draw attention to the already-discussed recursive nature of writing processes. Inevitably students need to confer with their partners to get more information as they draft. Essentially, writers must return to prewriting (gathering more information) and then back again to drafting. Additionally, these interactions set the stage for social interactions during writing time. We grab this opportunity to encourage social interactions during writing about any issue to do with writing. We build on this all semester.

Furthermore, we interrupt students in the midst of drafting to reinforce previously discussed concepts, in this case the leads, by having students volunteer to share theirs with the class. We are thus able to provide further models and discussion to support students on-going drafting.

Session Three (45-60 minutes)
In the third session, students are expected to come to class with a first draft done in a regular paper format. They are also expected to have shared their draft with a partner either in class or via email. We ask them make sure their partners are comfortable with all the information and to invite feedback from their partners for revision and editing purposes.

Up until this point we have deliberately avoiding discussing requirements for formatting with the students. We again engage our students in a focus lesson, this time highlighting issues of formatting of the piece using the computer. Some or all of the formatting tools we demonstrate are already known to some of our students. Significantly, however, they are also new for many. Students reported that a lack of knowledge and fluency with these digital tools create barriers to their composition processes. We do a think-aloud using a PowerPoint we have developed with visual models to demonstrate our decisions as writers. For example, the first slide shows the text as a typical academic paper- in black, 12-point Times New Roman, with one-inch margins. The second slide demonstrates decisions we made to change font, size of font, and to use a different fonts for highlighting things like the headings. The slide sequence also demonstrates changes to font color, and number of columns, and embedding of photos in the text. We also show the complex templates for newsletters available in Word or Microsoft Publisher, how to access them, and how to convert straight, narrative-formatted text into columns and text boxes. In our discussions of these templates, we delve into issues of multimodal presentations, effective graphic design, and issues of what text would be highlighted in stand-out text boxes (e.g. direct quotes).

After this focus lesson, we challenge our students to develop their technology skills by trying a formatting tool that they have not used before. We conclude by setting some requirements for formatting the feature article: (1) use of at least two fonts, (2) embed photo(s), (3) try one technological writing formatting feature that is new to the writer. We leave the rest of the decision-making processes to our students.

Importantly, during and after this think-aloud formatting lesson, we are sure to debrief with our students what it is *their* students would need to be taught in order to expand their technological abilities with writing. We discuss ideas about instruction that "levels the playing field" for all students by providing familiarity with computer tools that some students will not have had opportunity to develop at home. Issues of drafting with pencil and paper before going to the computer or drafting directly into the computer format also arise. We discuss the need for developing writers to focus on developing ideas before trying to also manage either keyboarding or complex composition formats.

Session 4 (About 30-45 minutes)

For the last session, students bring their completed hard-copy feature articles to class. They will have already have also posted e-copies to our class "Face Book," housed on our Bb sites. Students hang up their feature articles on the walls of our classroom— spread out in a line. In some rooms, we have had to hang them in the hallway. Students then go around and read the posted feature articles. As they read, they must provide feedback to the writers, using sticky notes we give them. As this is the first public sharing of our writing, the comments can only be positive--what we call words to glow by. For feedback, we ask them to center their comments on the key features of this genre, such as leads, voice and other traits of written products that we have learned about, and the formatting. Since there is not enough time for them to read every piece, we ask them to make sure that every classmate will end up with at least three comments from peers.

Students reading and providing feedback

We then ask students to partner-up and privately respond with feedback that provides *words to grow by*. Feedback and suggestions need to be *invited* by the author, again on a specific aspect of their feature article such as their lead, voice, or formatting. In this way, both students are engaged in assessment experiences--both for another and oneself. The first time we added in the critical feedback, we were a little nervous about our students' responses to it. However, the students talked at length with each other, even into their break time! We suspect that experiences with the positive sticky notes and the words *to glow by,* coupled with writer's control over type of feedback, provided a safe place for garnering meaningful feedback

Debriefing with students on the day's activities then follows. We debrief the public presentation of our articles. Despite the focus on positive feedback, there will still be students who admit to being uncomfortable about the public posting and with others reading their work and giving feedback. Looks of horror come over everyone's faces, if we even mention keeping these pieces up on the classroom wall for a week or so. As with the other aspects of this assignment, we seize opportunities to help our students make links to their future practices. In particular, we want to problematize ways that writing is shared in classrooms and how sharing is often dictated by teachers, as was the case in our class. The rich conversation the ensues allows us to describe experiences in which students have say in whether or not they wish to share their work publically. We talk about the multiple benefits of posting and sharing work in classrooms and hear writers' perspectives on both the public sharing and providing and receiving feedback. For instance, one student mentioned how seeing all the products, allowed him to, " Recognize the trait of voice in a piece over and over," so that he could really learn about it. Debriefing allows us to consider feedback processes and the critical role of the teacher in providing the words to glow by with their students, along with the *words to grow by*.

Additionally, we link our class face book to a hard-copy class book that teachers can put together, so that classmates can read about each other over the course of the semester. We then discuss and model ways in which K-12 students can share their writing in new ways, and potentially expand audiences from the classroom walls into student's homes, and communities, and even opportunities for global sharing (Leu, 2002).

Extensions

Technology: Over the years, we have altered or made extensions ourselves to this assignment. The focus lesson around technology is recent. We realized that we had given little thought to how teachers engaged in formatting processes as they completed these products-especially with technology. Early student products varied greatly--with some even turning in papers with

assignment headings typical of a college paper! Feedback from students indicated, that some were left bereft and upset when they saw the differences between their posted product and the complex technological products of others. We realized that models are critical, but not sufficient for effective writing instruction. Explicit instruction and teacher modeling are equally important. We, however, had left students without guidance to complete products new to them through novel composition processes: the very kind of practices that we admonish them to avoid in their own teaching! Obviously, the product formats still vary. But differences appear to be because of students' choices, rather than lack of knowledge. No one submits a feature article that looks like a college paper.

This activity could also be expanded in other ways around technology. For instance, expecting students to compose in a newsletter template, or creating a course blog site, in which the interviews are posted.

Assessment: Teachers could extend the assignment by focusing more specifically on assessment aspects of this assignment. For instance, students could develop rubrics or check lists for self-assessment that match up with key components of the genre and/or the expectations for leads, voice, fonts, photos, and trying out new technological tools.

Understanding writing processes/teacher roles: There are two main ways that instructors can extend understandings of teachers' roles in writing instruction during this activity.

1. The requirement of direct quotes in the feature articles provides a perfect opportunity to talk about stand-along-side focus lessons, which might be taught prior to or along with the process tasks of this activity, but not in such a way as to disrupt the flow of composition. For instance, a stand-along-side focus lesson that teaches about proper conventions of punctuation and capital letters in direct quotes could be a perfect extension lesson for this activity.
2. Both classroom teachers and teacher educators could use a graphic organizer (see below) with this activity to help students deepen understandings of writing processes. We have learned that broad understandings of process writing must be refined and situated both in specific genres and digital processes. Specific processes for writing this feature article are different from those we use in writing a cinquain poem. Likewise, digital composition processes demand knowledge of and use of keyboarding and other computer tools and presentation formats that can be multimodal in nature. Additionally, teacher educators can use this graphic organizer and accompanying discussion to

help teachers understand the role of the teacher in guiding and scaffolding students' engagement in writing processes through *focus lessons across writing processes*. Here is an example of a graphic we use with several of our pieces in our courses. We have included examples of processes used throughout this lesson.

	Prewriting/Planning	Drafting	Revision	Editing	Presentation
What did you do as a writer?	1. Learned about genre and its purposes/features 2. Learned about audience 3. Generated questions 4. Interviewed classmate 5. Took notes 6. Learned about leads 7. Decided on format	1. Thought about my information. 2. Tried writing a lead. 3. Thought about organization. 4. Wrote 5. Shared my lead with classmate. 6. Though about voice	1. Shared my draft with my partner. 2. Used feedback to revise	1. Read closely for spelling and punctuation errors. 2. Shared my draft with partner 3. Used feedback to edit	1. Learned how to connect narrative and digital formats using MS publisher. 2. Decided where to include photos 3. Decided on fonts for headings. 4. Posted my final product on the wall and on our class "Face Book."
What did I do as a teacher?	1. Genre focus lesson 2. Question focus lesson 3. Lead focus lesson	1. Worked one-on-one with students to answer questions and provide positive feedback. 2. Interrupted drafting to have students share leads	1. Facilitated student-student revision processes	1. Facilitated student-student revisions processes	1. Think-aloud modeling of formatting processes 2. Facilitated student public presentations

Figure 2: Combination Process and Instruction Chart here.

Examples

Below are examples of two final drafts of the feature article. These demonstrate writers' specific decisions around formatting.

Cassie Moulin

By: Amanda Farr

Cassie and her family at Senior Volleyball night.

"I had one teacher that really made a difference to me; I am still friends with her today."

Ingredients for Success

What do baking, volleyball, and a love of teaching have in common? These are the things that make Cassie Moulin a well-rounded and determined woman. She strives to be a leader and works to inspire those around her.

Cassie was born in Boise. As a child she attended a small private school. She grew up in Eagle with her parents and older sister. Her sister is a high school math teacher, secondary trigonometry and calculus. Cassie says that, although her sister enjoys teaching math, following her lead is not in her future. "I like math, but not that much."

Cassie is currently a student at Boise State University pursuing a degree in Elementary Education. Her emphasis is in literacy and she expects to graduate in the spring of 2014.

Recipe for a Great Teacher

Cassie's decision to become a teacher comes from teachers that influenced her. In fifth grade, her teacher, Miss Kyle, changed her view on education. "I had one teacher that really made difference to me, I am still friends with her," Cassie says. Miss Kyle took the time to understand what level her students were at, rather than teaching one level of curriculum to the class as a whole. When reflecting on her experience as a student, she said "I wanted to be that for other students."

In addition to attending Boise State College of Education, Cassie has also spent a great deal of time with children in other settings. She has spent time teaching Sunday school and enjoys the time that she has spent with the children. She said, "I have a love for kids."

Cassie and her team showing spirit on the court. .

HOOKS UPS, HOBBIES, AND OTHER THINGS

BY RACHEL INGRAM

INTERVIEW WITH KERSTYN MARTIN

You know the phrase, "Father knows best"? Well the way Kerstyn Martin met her husband, Tyler, was a funny, "Father knows best" story. Tyler's dad was dating Kerstyn's best friend's mom. Tyler's dad really wanted to hook up Kerstyn and Tyler so he asked for Kerstyn's phone number. She didn't even consider that the reason he wanted her number was to give it to his son. He told Tyler that Kerstyn really wanted him to contact her so he did. They started texting and eventually went on a date. Now here they are happily married!

"I ALWAYS SAID I NEVER WANTED TO BE A TEACHER… BUT I HAVE A HEART FOR KIDS WHO STRUGGLE."

Kerstyn's hobbies include rock climbing, Frisbee, and hiking. Kerstyn told me she also likes going to a coffee shop and reading. She loves reading Stephen King and fantasy novels the most. Kerstyn also likes hanging out with Tyler who is an English creative writing major at Boise State University. He works for Domino's and is also a writer. In fact he is currently writing a fantasy novel. Kerstyn is very anxious to see the finished product. She said it's really good so far.

Kerstyn's immediate family includes three siblings (an older brother and a younger brother and sister) and her parents. Both her parents live in Boise. Her dad works for the state as a land specialist and her mother is a teacher. She also has a husky/ border collie mix dog named Domino. When I asked Kerstyn if she had any interesting relatives she said she has an aunt who is a brain surgeon! Kerstyn said, "She's ***crazy*** but intelligent."

Kerstyn is a special education major at Boise State University. When I asked her why she wanted to go into teaching she had a very interesting answer. She said "I always said I never wanted to be a teacher… but I have a heart for kids who struggle." This really piqued my interest because just about every education major I have talked to says they always wanted to be a teacher or they have always had a heart for teaching. It was also interesting because her mother is a teacher so you would think that would be why she chose that career. Kerstyn also said she wants to teach because she loves the constant change of teaching and she loves planning.

Kerstyn has many exciting accomplishments. She has played soccer in high school and college. In fact, her *freshman* year of college, she was awarded **Most Valuable Player!** Kerstyn still plays soccer for fun but is not currently on a team. She has also made the Dean's list at Boise State twice in a row. The most exciting accomplishment Kerstyn shared with me was that last spring she co-led a mission trip to Costa Rica for six weeks. This group shared the gospel with the students on one of the college campuses there! That is a lot of accomplishments for someone so young!

[Pick the date] [Edition 1, Volume 1]

Your Turn

In addition to the detailed activity above, we have learned some important points for successful engagement of our students as both writers and writing teachers that may be of use to you.

Writing with your students: If you wish to try this activity with your students, we first suggest that you involve yourself in creating a product in this genre as well. Writing with students and modeling that for them is important (Kaufman, 2009; Martin & Chase, 2010). In order to effectively model and provide important focus lessons, we had to take the time to write and reflect along with our students. Immersion in one's own composition processes on specific products reveals the challenges of composing in that genre. We found this is especially important for creating complex digital products. When we began to create products with our students, we realized how complex deciding on graphics to complement text can be. Something as simple as selecting a font can be a thoughtful decision, not to mention the complexities of adding and placing graphics or music/sound, as we do in other products. Even understanding that these

features should complement the text might be a concept foreign to students.

Overlapping writer and teacher roles: We have learned that it is essential for teachers to engage in experiences as both writers and teachers in our courses (Martin, 2009; Martin & Dismuke, 2012). The interview feature article is a typical assignment for K-8 classrooms—one that teachers can use in practice—but one that also engage our students at adult levels in order to foster development of powerful experiential understandings. This is a genre far-removed from the academic papers that typically have been the only type of writing most of them have done in years. Furthermore, this assignment works well to engage students in the enhanced social interactions that, in part, define new literacies (Coiro Et al., 2007; Leu, 2002). Engaging teachers in writing as purposeful social and collaborative activity is central to our writing courses.

Importantly, as teacher educators we model the active teacher role needed in effective writing instruction. We have become more explicit in modeling focus lessons across writing processes and providing opportunity for our students to engage in a variety of feedback modes. We have worked diligently to establish and model communities of writing and learning in our courses. We foster teachers' abilities to engage in collaboration and sharing across all aspects of process writing.

Equally critical, to our minds, are increased opportunities for students to make explicit connections between what they are experiencing as writers and what they can do as teachers. Our combination process/instruction chart is the latest example of fostering these connections.

Make Time for Explicit Technology Instruction: Finding time for new topics in already-filled teacher education courses is ever challenging. But we absolutely needed to add a class session to this activity that allowed us to fully model instruction around use of digital technologies. New technologies have opened up a wide array of possibilities for written representations, how those representations intersect with visual and auditory modalities (Coiro, Et al., 2009), as well as audience access. Feedback from our students' clearly indicates that the digital requirement of this piece have pushed their understandings:

> I used a new template in Word for the first time that was much more complicated than I was used to. It took me a while to get used to it, but in the end it was worth it and I was really proud of my final product. (Rachael)

> For the interview assignment, I experimented with using borders, text boxes, and multiple fonts to give my interview the appearance of an article that came straight from a newspaper or magazine. It was my first time playing around with this combination of tools in Microsoft Word, and I had a lot of fun creating this product. (Stefanie)

If we are to prepare teachers to teach writing effectively in the digital age, embracement and envisioning of new writing processes and written products need to begin in teacher education. Keeping current with the ways we write and how children are/should be learning to write with new technologies is integral to these changes. As one of our students reminded us, "…writing is more than just putting words on paper."

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Working with Teachers in the K-12 Setting

Chapter 8

Helping Teachers Make the Shift: Professional Development for Renovated Writing Instruction

Vicki S. Collet
University of Arkansas, USA

Sandra Summers, a teacher in her final year before retirement, sat in my workshop on renovating writing instruction. She had provided many years of solid English instruction to middle-school students, and it was clear that she planned to do the same in her final year of teaching – in just the same way that she had for the last 29 years. I wondered how to get through to her. A cart of 30 netbooks would soon be delivered to her classroom, and I hoped that both she and her students would experience the expanded opportunities that this technology could provide. What was the best way to inspire Sandra, and colleagues like her, to make the change? This chapter describes the professional development process that led Sandra to infuse her writing instruction with technology and new literacies practices, a change that prompted one of her students to exclaim, "Netbooks are all the good things in the world packed into one little thing. We use them all the time, which is righteous!"

Why Change? Foundations for Shifting to New Literacies Instruction

The purpose of this chapter is to describe effective professional development that infuses writing instruction with technology and new literacies practices. Based on findings of a study in a school district in the Western United States (Collet, 2012), the chapter outlines components of training that resulted in changes in both instruction and students' writing practices across ten middle schools. Importantly, the professional development described below produced improvement in students' writing achievement on traditional standardized assessments and also produced changes in their use of new literacies practices. This professional development sequence can be used by teacher educators in a university setting with both pre-service and in-service teachers or as a guide for providing professional development in district-based or other settings.

A Broadened Concept of Literacy

Effective professional development begins with a clear understanding of the need for change.

For professional development focused on writing instruction, this includes an understanding of the characteristics of new literacies. New literacies are more social and collaborative than those of the past (Cervetti, Damico, and Pearson, 2008; Gee, 2004; Williams, 2008). New literacies practices are more participatory, with fewer "gatekeepers" (Lankshear & Knobel, 2006), meaning that there is no one holding back distribution until standards of practice are met. New literacies are more multi-modal (Cope & Kalantzis, 2007; Kress, 1997), since text, images, video, and audio are all readily available. Additionally, there are expanded methods for producing, distributing, exchanging, and receiving text (Leu, Kinzer, Coiro, & Cammack, 2004; New London Group, 1996). Support must be provided to teachers so that their writing instruction reflects this broadened concept of literacy.

A Gradual Release of Responsibility

Using a gradual release of responsibility model (Pearson & Gallagher, 1983) provides support for teachers as they make instructional changes. This support can include opportunities for teachers to learn about new literacies through modeling, explicit instruction, and guided and independent use of the processes and tools associated with new literacies. New literacies practices and stances should be part of the social context for professional development, and preparation should include instruction on the role of technology. Those who provide pre-service and in-service teachers with professional development should model the use of new literacies by using them as a means for professional development: professional development should occur through a pedagogy of new literacies and should include the use of technology. In the sections below, professional development processes and content that support teachers' integration of new literacies practices are illustrated, and considerations for implementation are discussed.

Supporting Teacher Change through Professional Development

For sustained changes in instruction to occur, teachers need ongoing professional development that provides support while they are in the process of changing their practices. After an initial opportunity to think deeply about the need for change, teachers are supported through a sequence of short, practical sessions that provide not only information but also hands-on opportunities to put new ideas into practice. Throughout the professional development process, teacher learning occurs as they consider new literacies through an approach that uses new literacies practices.

Learning *about* and *through* New Literacies

Teachers benefit from the opportunity to learn about new literacies through a new literacies

stance. Embedding new literacies practices in teachers' learning experiences provides models that emphasize and encourage these practices. Teachers and prospective teachers should access, create, and share information, through multiple modalities and technologies, as part of their own learning experiences. For example, professional development can include opportunities to use and create podcasts, webinars, and Prezis; communicate via listservs, blogs, and discussion boards; and utilize digital video and other media for a variety of purposes. Teachers should become skillful with a variety of information and communication technologies (ICTs) and be able to analyze their uses critically (Cervetti et al, 2006; Hutchison & Reinking, 2011; Karchmer, 2008; Kist, 2005).

When delivering training to both new and veteran teachers, emphasize the additional affordances that technology provides. Teachers should recognize that new literacies practices use technology to introduce new possibilities. Changing a paper and pencil exercise to a keyboard activity is an easy but ineffective way to incorporate technology. Continued emphasis of the characteristics of new literacies can create a paradigm shift that opens opportunities for transformed instruction.

Changing Paradigms

Providing a vision. To begin the initial training, teachers should see models of instruction that effectively integrate technology and new literacies practices. For example, practicing teachers could be invited to share their class wikis, blogs, or other learning platforms that they have created. Showing work that students are currently engaged in via these means can provide a tangible vision of what new literacies instruction might include. These opportunities enhance teachers' understanding of tools for teaching writing that incorporate new literacies. They encourage teachers to redefine literacy by recognizing opportunities that would be inconceivable without technology (Puentedura, 2011).

Conceptual foundations. Initial training focuses on a conceptual understanding of the characteristics of new literacies and how they relate to writing instruction. These grounding principles provide the purpose, background, and incentive necessary for change. This focus can be established initially through reading and dialoguing about short professional texts such as "Technology Lite" (McVee, Bailey, & Shanahan, 2008), "Honing Computer-Aided Writing" (Palmquist, 2009), "Tomorrow Will Not be Like Today" (Williams, 2008), and "The Lessons that Children Teach Us" (Leu, Castek, Henry, Coiro, & McMullan, 2004). These texts provide descriptions of instruction that varies significantly from traditional language arts instruction and push teachers' thinking about what literacy instruction could and should be.

Because integration of technology represents a significant shift in instructional practice and even a change in teacher identity (moving from teacher-as-knowledge-provider to teacher-as-learning-facilitator), it is helpful to begin a discussion about technology and new literacies by providing a theoretical foundation, a vision, and an opportunity for teachers to begin to see themselves within that vision. Before teachers walk away from the initial training experience, they should envision new literacies instruction, be introduced to Web tools useful in the writing process, have some hands-on practice with these tools, and be supported as they begin building an online platform for their students' writing instruction (a Wiki, Blog, or BlackBoard course, for example).

Observation as an Instrument of Change

An important aspect of professional development that leads to sustained change is the opportunity for teachers to see new practices in action. This can be achieved through demonstrations, video recordings or, most effectively, through site visits. Observations are an efficient and effective allocation of time and resources to forward the change process.

If possible, arrange a teacher field trip to see classrooms that are incorporating new literacies practices. When teachers make an onsite visit, they watch classroom procedures that have been put in place to smoothly integrate technology. They see students collaboratively creating content. They recognize the flexibility students have been given and the resulting engagement in learning. They notice the authenticity provided by access to audiences both within and beyond their classroom walls. If onsite visits aren't possible, provide similar experiences through Skype, videos, or demonstrations. Seeing new literacies practices in action highlights the benefits of making the substantial effort required to renovate writing instruction.

Just-in-Time Trainings

Because technology can be overwhelming to some, short trainings provided at frequent intervals are beneficial. Such trainings introduce a few tools at a time, with opportunities for hands-on practice and consideration of how to include such tools in instruction. Providing in-depth training on a few tools at a time is more effective than providing an overview of many tools. It is less overwhelming (and more helpful) to learn a few tools well - and walk away able to use them and teach with them - than to have an overview of the myriad tools available.

Because applications and online tools are constantly changing, one important feature of these just-in-time trainings is the opportunity provided for teachers to not only learn new tools but to learn how to learn new tools. Examining their own processes for learning technology will

not only empower teachers to continue learning updated tools in the future, it will also provide them with a window into how to support their students' learning process. Be sure to include independent exploration as a means for learning, as this is how technology tools are often best understood. Explanations or demonstrations of technology tools without hands-on practice is unlikely to result in application.

The Recursive Writing Process

To support instructional change, introduce teachers to tools that are useful for each stage of the writing process. This approach enhances teachers' knowledge of both the recursive writing process and technologies that support that process. It ensures the primary focus is improved writing, with technology tools being used in service of this goal. Each follow-up training focuses on a different phase of the writing process and introduces tools that might be used during that phase. For example, exploration of prewriting tools can include RSS feeds, tools like Diigo for social bookmarking, online organizers and concept map apps, and digital recording. For drafting, teachers might explore the use of wikis and Google Drive as well as more traditional word-processing tools. Screencasting tools, blogs, and online discussion boards could be considered as means for gathering feedback during revision and editing, and multimodal tools (Storybird, Glogster, Corkulous, Scribble Press, etc.) can be incorporated as teachers explore venues for publishing student work.

Addressing Teachers' Varying Needs

Breaking with the Past

It is important that teachers have abundant opportunities to learn about and use new literacies tools and practices so they feel motivated to incorporate them into their own instruction. Doing so requires willingness to take a risk. Teachers typically see themselves as the expert in the classroom, and incorporating new literacies means opening the classroom up to practices where students may have more experience than their teachers. Giving students opportunities to select tools they believe will help them achieve their writing goals increases student ownership and allows students to use the expertise and experience with technology that they may bring to the classroom. This may present a paradigmatic shift from teacher-as-content-expert to teacher-as-learning facilitator - one who designs meaningful learning experiences and allows students to select and use appropriate tools and construct their own meaning.

Even when teachers are comfortable with new literacies practices themselves, they may not independently consider how to apply them in their classrooms, choosing instead to follow the

patterns in which they themselves were schooled (Lortie, 1975). Even young pre-service teachers who are savvy about technology may not recognize these practices as part of how we "do" school. Thus, it is important that the affordances that new literacies could provide be explicitly discussed in teacher education and professional development settings. Such discussions can break the patterns of past practice and open opportunities for improved instruction.

The Role of Literacy Coaches

For in-service teachers, change can be supported through use of literacy coaches. Coaches need not be technical experts; they can experience trainings side-by-side with teachers in their building. Having a partner in the journey increases the likelihood that instructional changes will occur and be maintained. Because coaches typically bring expertise in literacy practices, having a coach as this partner in the change process increases the likelihood that, rather than focusing on technology, the primary focus will be improved student writing.

An Example of Successful Change

The study that provides the foundation for this chapter occurred over the course of three semesters. This long-term commitment acknowledges the finding that in order for instructional change to stick, ongoing support is needed (Comer & Haynes, 1999; Deshler & Mellard, 2006; Fullan, 2004; MCRR, 2011; Stoll, 1999; Taylor, Pearson, Peterson, & Rodriguez, 2005). Teachers in this study were in-service, seventh-grade English teachers working in ten middle schools in the same district. Below is a description of the professional development that was provided over the course of three semesters; adaptations will, of course, be necessary to fit particular contexts. For example, the training could be offered as a semester-long course or, more preferably, as a two-semester sequence of courses. Approximately 50 hours of training are described below. In a 16-week semester, meeting for 3 hrs. once per week would provide sufficient time for exploration. A two-semester sequence would allow for a more gradual learning curve and greater opportunities for participants to apply what they had learned. A sequence for instruction which could be adapted for any of these scenarios is described below.

The professional development opportunity on which this chapter is based began with a full-day training. The training occurred *before* a cart of 30 netbooks was delivered to each teachers' classroom. The day included the components outlined in the section "Supporting Teacher Change through Professional Development," above. Two guest teachers used the SmartBoard in the training facility to share their class Wikis, including examples of student work that were housed there. One of the teachers shared a Google Drive project that was an international

collaboration between students. Another shared student blogs that functioned as interactive literacy response journals. Training participants were energized by the enthusiasm of the presenting teachers and by these teachers' passion for the use of interactive online tools.

Following the presentations, teachers divided into groups, with each group reading a different professional article that highlighted aspects of digital writing. Then each group prepared and delivered a presentation about the article, using digital tools they were comfortable with at that time. After lunch, there was a presentation and discussion of stages of the writing process. Its recursive, iterative nature was described. Then digital tools for each stage of the writing process were shared. Teachers accessed these tools on laptops as they were presented. Then teachers had the opportunity to get into small groups and discuss upcoming student writing projects, considering how they might begin to incorporate digital tools. To close the day, each teacher was supported as she set up an online course platform for her students using BlackBoard, the district's tool for allowing teachers to provide resources for students to access online.

For the first two months following delivery of the netbooks, teachers met twice a month after school, with another training held at the end of the third month. Each of these just-in-time trainings lasted for two hours. Each training included a focus on a different stage of the iterative writing process (pre-writing, drafting, revising, editing, and publishing); each training included short texts on the writing process for teachers to read and discuss (usually through an online discussion board, with a follow-up face-to-face exchange). In addition, each training included ample opportunity for teachers to play with the tools they had been introduced to and to plan for their classroom use. Because the trainings occurred every two weeks, teachers had time to put their learning into action before being introduced to additional tools. Trainings included opportunities for teachers to problem-solve together, and getting together frequently provided camaraderie as teachers supported each other through the ups and downs of implementing new teaching strategies.

A book study was also included in these after-school trainings (and in the four monthly trainings held in the following year). Books were selected that did not overwhelm teachers with lists of tools they could use; rather, the texts painted a picture of writing instruction that incorporated technology and gave practical suggestions for implementation. Teachers worked in groups and selected a chapter from the book, and at each session one group presented highlights from their chapter. They were encouraged to share these highlights with their colleagues using a pedagogy of new literacies.

The conclusion of phase one of the training was a two-day summer institute. At the institute teachers were encouraged to keep writing as their primary focus and technology as a means to an end. Teachers discussed audience, genre, and mode, then explored digital tools appropriate to different venues. They created products such as podcasts and photo stories using digital tools (see the website accompanying this book for an example of teachers' work). Information about copyright and fair use guidelines (especially in relation to transformation of content) was also included. Teachers were given ample time to plan for how they would use technology and new literacies practices with their students from day one of the following school year. They collaboratively created or adapted units to capitalize on what they had learned about renovating writing instruction.

As mentioned above, four additional trainings were held during the following year as teachers focused on how to use technology ubiquitously during writing instruction. Digital devices were available for every student from the onset of the school year, and measures were put into place to determine the impact of this project. Importantly, we found that teachers developed an understanding of the conceptual foundation of new literacies and regularly and meaningfully incorporated technology. Students whose teachers participated in the training described above demonstrated increased engagement and use of new literacies practices. Standardized tests of writing achievement showed gains for students whose teachers participated in the trainings when compared with a matched control group (Collet, 2012).

An important finding from this study is that professional development matters when integrating technology into writing instruction. Professional development appeared to be a necessary component of successful technology integration. Just providing access to technology in the classroom may have some benefit for students, but to leverage this investment teacher training is critical. Adding technology, without instructional changes, does not substantially improve students' writing. Teacher training is necessary to meaningful integrate technology in ways that make a difference in students' performance.

As new literacies practices and tools are incorporated into writing instruction, writing becomes a more fluid, multimodal, and collaborative process, mirroring the writing that takes place today in the workplace and in social contexts. Providing training that leads teachers to revamp writing instruction and incorporate such practices makes an important contribution to increasing the relevance of students' educational experiences, bridging in-school and out-of-school literacies.

Preparation and Implementation: Your Turn!

As you plan learning experiences for pre-service and in-service teachers, it will be necessary to adapt the description above to fit your specific context. The following discussion includes considerations for both the technology and the training you'll want to provide to make effective use of the technology.

Technology Considerations

If you are involved in acquisition of technology for classroom use, you'll want to consider issues of internet access and hardware. Both are described below.

Internet access. Many of the technology tools described above require access to the internet, so an important consideration when planning for instruction that incorporates new literacies practices is the ability for students to access the internet. You'll want to understand the capacity of internet access: What is the bandwidth of the schools' system? Are network devices placed to provide adequate internet access to the rooms where students will be using digital devices?

Another important consideration is students' access to internet content. Many schools have filters in place that restrict teacher or student access to internet sites. What process is in place for teachers to appeal these restrictions so that they or their students may access appropriate, useful tools?

Hardware. If you are involved in the decision about which type of digital device to purchase for student use, power, platform, portability and price are aspects you'll need to consider. Because these aspects of digital devices are constantly changing, you'll want to investigate features of devices that are currently available. Some points for consideration are listed below to guide your exploration.

As you think about the computing power your students will need, you'll want to think not so much about available RAM, but more in terms of ability to access the tools and use the processes that will improve students' writing. For example, when composing a synthesis or a literary analysis, students may find it helpful to access multiple documents concurrently, a feature that may not be available on tablets (tablet hybrids, as well as laptops, netbooks, and some chromebooks, do incorporate this feature).

Considerations regarding platform extend beyond the long-standing PC/Mac debate to considerations of whether the device's operating system is application-centric or file-centric. If it is intended that students will compose extended texts and build digital portfolios, an operating system amiable to systematic storage and retrieval of files is warranted.

Portability may also be a decision-making factor. Do questions of access suggest permanent placement of devices in a central location? Is the goal to have access within specified classrooms, or is portability between classrooms a priority? Alternatively, might students each be provided a device that they will carry with them? Each of these scenarios defines parameters for hardware acquisition. Constraints imposed by price may impact the power, platform, and portability you are able to provide through the digital devices you decide to purchase.

Helps for the Training

When you are ready to plan the training that your teachers will experience, you may want to use a backwards design. Begin with the end in mind by determining your objectives for the training and deciding how you will know if you got there. Use these factors to guide you as you design both the overall training and each individual session.

As you plan your professional development, think about how you can incorporate features of the training described above. What will be important for your participants to experience? What unique characteristics of your contexts should you consider? As you plan learning experiences for teachers, you may want to access the agendas, presentations, and references available in the online portal that accompanies this book.

You may also want to plan for ongoing support for teachers after the professional development experience is completed. What structures are already in place that might be utilized (instructional coaches, PLCs, etc.)? What additional supports could be put in place? You might consider providing an opportunity for ongoing communication among participants by creating an online community as a way to extend support beyond imposed time constraints of the training. Or set up regular "Appy Hours" that allow for professional collaboration and sharing of digital applications.

Getting Started: First Steps

If you have not already done so, a first step in preparing to support teachers in incorporating new literacies practices is to try them yourself. You might:

- Start a personal or professional blog
- Use Google Drive on your next collaborative project
- Download and use educational apps (Edmodo, Puppet Pals, Voice Record, Corkulous, Scribble Press, Poplet, Storify, visual.ly, Audioboo and Evernotes, to name a few)
- Create a podcast
- Include an online discussion board as part of a course
- Create a totally online course
- Try tools recommended in other chapters in this book

Be cognizant of the processes you go through as you learn these new tools so that you can incorporate similar learning experiences in the professional development you provide. Training that incorporates the suggestions above can inspire teachers of all levels of experience, from pre-service to nearly-retired, to renovate their writing instruction, infusing it with technology and new literacies practices. This important shift will engage students, bridge their in-school and out-of-school writing experiences, and prepare them for the real writing that will be required of them in the future in their work and personal lives.

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Chapter 9

Teaching Long-Term English Learners to Write in Content Areas: The Application of Dynamic and Supportive Instruction

Nancy Akhavan
California State University, Fresno, USA

Recently, I was working with a group of kindergarten through eighth grade teachers as they worked to create lesson plans for their English language development instruction. All ten of the teachers in the group shared that they don't use technology to teach writing. The teachers were eager to help their students acquire English and they spent quite a bit of time talking about what they do in their classrooms to teach students English. About one half hour into the discussion, I posed a question to the teachers. I asked them how they teach their English learners to write; I also asked about computer use by students to write. The teachers were surprised by my questions. One teacher stated that she only teaches what is on the state English language development assessment and that didn't include writing. Another teacher stated she taught vocabulary development and she wasn't sure if the words students learned transferred to their writing. A third teacher said that her students don't come prepared to her sixth grade classroom to write; she added that the students couldn't even indent paragraphs.

I thought a bit about their responses, and I felt a great desire to share with them what I learned from teachers who routinely teach English learners to write using technology. I began by responding to their initial answers. I said that there was so much more to teaching English learners about writing than just the mechanics of writing, or vocabulary to use when writing; I suggested to them that they consider using writing as a vehicle for students to acquire English and to explore topics that interest them. I then shared with them the experiences of teachers who worked with English learners in writing, and how they used technology to engage students in the writing process. The group wanted to hear more about the teachers success and what strategies they found most useful to help students write and to use technology in the classroom.

This chapter is about strategies to support students who are English learners in writing. Specifically, the chapter discusses how best practices for teaching writing to long- term English

learners were implemented at multiple rural and urban elementary and middle schools and how this instruction furthered the language acquisition of involved students. The goal of this chapter is to provide practical implementation strategies for helping elementary and middle school English Learners write and increase their language acquisition in the process.

Purpose: Why Focus on Strategies for Teaching English Learners to Write?

Language has four domains: listening, speaking, reading and writing. Students can learn language in each domain at any given time, domain learning is not dependent upon learning other domains, however, most students do acquire proficiency in listening and speaking skills prior to proficiency in reading and writing skills. Teaching specially tailored strategies to meet the needs of English learners is important. English learners learn academic language as well as concepts in content when taught strategies that help them succeed at academic tasks. Because students may be at various stages of language proficiency, it is important to teach students to be independent as writers. We cannot assume that students cannot write just because they have limited proficiency in English, what we need to focus on is how to support students in writing, no matter what their proficiency is in English.

English learners need specific strategies to help them write. While a teacher may be tempted to focus on teaching a writing lesson to all students in her class, and not differentiating the instruction for English learners, the teacher can support student learning with differentiated writing strategies that specifically support English learners' language acquisition and literacy skills. Differentiation is generally understood as the teacher's ability to meet students' cognitive abilities with appropriate instruction according to their readiness levels (Reutzel, Mandel Morrow, & Casey, 2009; Tomlison, 2001). Differentiation might include writing scaffolds like sentence templates or paragraph examples. Differentiation might also include the use of vocabulary journals and graphic organizers that help English learners plan their writing pieces. Differentiation can occur through students using computers or tablets to learn about concepts they are writing about through streaming videos and website exploration. Whatever type of scaffold a teacher may use in the classroom, English learners need exposure to lessons that take into account their linguistic abilities and differences (Reutzel, Mandel Morrow, & Casey, 2009).

Overview: Effective Strategies in Practice

Five strategies evolved from the work of teachers and students involved in the writing and teaching initiatives at elementary and middle schools in California with large populations of

English learners. These strategies include technology, physical and visual supports, teaching and writing about research, and providing time to teach writing.
Effective implementation of the strategies includes three foundational concepts: (1) developing deep understanding of the strategy to be implemented, (2) preparing for implementation of strategies through lesson development and material gathering, and (3) monitoring effect of instruction on student learning. These three foundational concepts are defined and how they apply to each of the five strategies is discussed.

Understanding the Strategies

Strategy one: The use of technology to support writing. The use of technology is the basis for all of the strategies implemented except for giving students time to write. Technology provided physical and visual supports for students and their writing, providing a platform for teaching and conducting research, and exposed students to ways that writers think in their content disciplines. While technology was used in the classroom, it was mostly focused on teacher directed technology, like multimedia projectors and interactive boards. These strategies focus on the use of technology by students. The involved schools were in a geographical area where a digital divide exists among students who are socio-economically advantaged and disadvantaged. Disadvantaged students had limited access to computers at home, and did not have abundant access to the Internet in their communities. The focus of the use of technology was to provide students the opportunity to use the computers to learn and write, not to just watch the teacher use the computers or other technology. The classrooms used projection devices, like LCD projectors, to involve students through the use of document cameras and PowerPoint presentations. One of the elementary schools had computers available for students to compose writing. At this school, there were enough laptop computers for students in grades three through six to compose their writing in Microsoft Word. Many of the middle schools used interactive white boards to engage students and involve them in learning material in specific content areas as preparation to write.

Strategy two: Providing physical and visual supports. Teachers provided English learners support when writing. Supports act as scaffolds to help the students gain access to the skill taught and support learners through the gradual release of responsibility. The gradual release of responsibility is an approach to lesson design and structure where the teacher begins by owning the responsibility for launching the learning, and the responsibility for ownership of the task or skill moves to the student, in a gradual manner until the student has the ability to perform the task or skill independently.

English learners require and deserve instruction that is specifically designed around language acquisition and is tailored to their individual language needs. To learn effectively, English learners should receive instruction beyond what maybe considered as 'just good instruction' by teachers who implement strategies considered effective for English only students. English learners benefit from instruction designed to develop academic language, language uses and forms, and mechanics. In particular, English learners benefit from instruction delivered in a way that supports language acquisition rather than language teaching. Supports can include sentence frames, realia, pictures and multimedia sources.

Support can be visual or physical. Physical supports include the organization of the classroom, the materials and equipment available for student use, and even access to other individuals. Visual supports when incorporating the use of technology can be virtual supports as well. Virtual supports include any media accessed through the Internet, or other tools such as DVDs, that support students' understanding of concepts, including streaming videos, photos, interactive websites and student created and uploaded videos and podcasts.
Teachers used charts, sentence frames, vocabulary banks, and writing/research notebooks to help students organize information, practice writing and edit revised manuscripts. The classrooms employing supports were filled with a plethora of materials from classroom-wide supports, which were displayed around the room, to individual supports, which were kept in student notebooks, binders, and computers.

Strategy three: Directly teaching research and writing about research. The teachers involved in the initiatives focused on transformational teaching. Transformational instruction does not focus on the transmission of information from teacher to student; it focuses on students constructing their own knowledge. Transformational teaching is supported by lessons that guide student discovery and help students build skills and develop strategies. Generally, instructional strategies used in classrooms on a regular basis can be described as a type of instructional model. Genesee and Riches (2006) identify three general instructional models that encompass a variety of methods, techniques and strategies for teaching English learners. These three approaches include direct instruction, interactive instruction and process-based instruction.

While direct instruction is not appropriate for all teaching and learning, there are times when a student may benefit from direct instruction. Direct instruction, while considered part of a mastery learning model, can also be a scaffold to guide student learning when students do not know how to do something, like approach a writing task (Verdugo and Flores, 2007). English

learners who are acquiring academic language might need instruction in how to complete research and then write about their research. While direct instruction can stifle student knowledge construction, small doses of direct instruction, followed by ample time for students to write and develop their thinking, can be very helpful for English learners as they acquire academic language and academic writing skills.

Additionally, teachers who implemented these strategies in their classrooms provided students with guidance when conducting research using the Internet. Students required more than experience with how to find information on the web; they needed help to discern reliable sources and judge fallacious thinking in electronic sources. The teachers found that the students needed writing models to write about their research. Lessons, preferably mini-lessons, can help English leaners develop topics, write topic sentences and support topic sentences with details.

Strategy four: Thinking like a writer in content areas. Another strategy that arose from the teachers' practice was modeling thinking and writing in content areas. When students learn content they are usually taught facts and bits of knowledge that may or may not connect together in meaningful ways. With the advent of No Child Behind legislation, the focus on instruction in elementary schools has evolved into a focus on reading and mathematics, to the detriment of content area instruction. The result is that students who tend to struggle in basic areas, like English learners, have limited instruction in content areas in elementary school. This reduction in content area instruction reduces students' prior knowledge in content areas as they move into middle and high school. One way the teachers continued to teach content areas in a crowded curriculum was to integrate reading and writing with content area teaching.

Integrated units provided teachers an opportunity to teach students to think like writers in specific content areas. For example, when teaching science, teachers helped students focus on what they wanted to communicate with readers about what they were studying and learning. Teachers focused student thinking by asking questions like, "As a writer, what would you want readers to know about your project/research?" or "What is important to tell readers about what you are learning, should you share your findings, or your steps of research?" When teaching social studies units, teachers helped students think about what they wanted to communicate to readers about historical events, people and/or events. Teachers crafted questions to guide students to think about their writing. When students spent time thinking about their writing it was easier for them to put their thoughts into words and get the words written down. To give examples of what the writing in these content areas looked like, teachers gathered articles and other writing from websites and used these during mini-lessons. They also allowed students to find their own examples of writing on student focused science and social studies websites and

the students used these examples as writing models.

Strategy five: Providing time to write. The schools involved in the initiatives had implemented uninterrupted daily schedules; staff members were cognizant of instructional time when scheduling assemblies, announcements and other interruptions. It wasn't enough for the teachers to focus on teaching writing. The teachers found that interrupted schedules gave them the opportunity to carve out protected time during the day for students to write. This was important because uninterrupted teaching time was not always carried out at all schools. Teachers also protected the block of time provided to give students time to think about writing, plan their writing and write. The teachers avoided squeezing this time due to pressures of other content areas. Providing students time to write goes beyond allowing students free time during the school day, time to write includes accountability. During writing time students in both the elementary school and the middle schools were expected to write, not to involve themselves in other activities.

The teachers found that students often did not relish writing, as they had to work hard and apply themselves. If given opportunities to be involved in other activities, or activities of their choosing, most students would not write. Therefore, the teachers established the rule that writing time was for writing. There was also accountability for the teacher during writing time. During this time period the teacher was available to conference with the student and to coach student writers. The elementary schools provided time for writing each day by delineating a writing period in the daily agenda. The middle schools provided time for writing each day by focusing on a lesson design that expected students to write as part of learning including information consolidation.

How do I do It? Preparing and Monitoring Implementation

The strategies described cannot be implemented in the classroom without creating structures and expectations for student use and engagement. Students tend to behave as expected, and sometimes even the most organized teacher fails to clearly identify expectations for engagement during work periods. First, a curriculum plan of the teaching of writing should be created. This is best done through the development of writing units that focus students on specific writing topics or genres. Once the teacher decides what units of writing should be taught, then the units and lessons can be developed with the teacher incorporating writing strategies, English Language Arts standards, English language development standards and content standards. Second, the students should be introduced to the technology that will be used for

writing. If students are to use computers to create their writing, then they need instruction in the use of electronic documents and keyboarding skills. Using computers to teach writing and give students time to write is not only about teaching keyboarding skills. Students should be expected to use programs to create their writing and use technology available to them to share their writing in the classroom and across the school. To prepare for using technology to teach writing, an inventory of equipment and materials is important. This begins with organizing computers or tablets for students to use for their writing.

Once writing instruction and time to write is launched, the teacher needs to monitor the effectiveness of the implementation. The most important piece for teachers to reflect upon is whether students are producing writing. Second, teachers should reflect upon what students are writing, what they seem to be learning about writing and how future lessons can be crafted to support their learning and ability to write. Another important component for the teacher to consider is the effective use of technology to support the students writing efforts. Students will need guidance to produce their writing pieces using computers or tablets. If web based applications or open source applications are used to support students as they compose writing, the teacher can reflect on student ability to use the applications independently or with support and make adjustments as appropriate. The overall goal of technology use in teaching writing is to release responsibility to the student.

Extensions: Applying the Strategies to Teaching Long-Term English Learners

Long-term English learners have specific needs that are different than the needs of students who are making adequate progress with language acquisition. It is generally considered that a student will acquire both communication and academic language somewhere between five to seven years from the time the student begins to acquire English. Long-term English learners are students who began their acquisition of English at a young age, usually upon their matriculation into kindergarten, but who get stuck in their acquisition and do not continue to develop English skills, or don't develop academic language. These students often enter high school struggling academically, a situation caused by several factors, but most importantly, most have not been exposed to English language development instruction in systematic ways. Long-term English learners do not have the academic skills, including academic English, they need to succeed in school and they may have experienced major instructional gaps during their elementary and middle school years (Olsen, 2010).

Using technology can help long-term English learners by providing them opportunities to

examine writing in the content areas on websites they find interesting, they can also create 'writing groups' using applications like Google Drive where they can share writing with one another, or collaboratively write summaries, reports and essays. The strategies implemented at both the elementary schools and the middle schools had success in helping long-term English learners write. The long-term English learners were in the fifth and sixth grades in the elementary schools, and in seventh and eighth grades at the middle schools. Prior to the implementation of the strategies at the schools, the students considered to be long-term English learners did not engage with writing or writing activities and often appeared unmotivated to try to write.

Examples of Strategies in Use

The third and sixth grade team at Pinedale Elementary School in California used technology extensively to teach writing to students. The teachers focused on the use of technology in two ways: using technology to make instruction engaging and using technology to help students produce writing. At the time that the technology and writing initiative was implemented in the school, classroom technology was limited to overhead projectors and the use of laptop computers by the teacher to project presentations designed to enhance lessons. Student use of computers was limited to the computer lab in the library, or a few computer stations in the classrooms for students to take reading tests. Prior to the initiative, students did not use computers to produce writing. By the end of the second year of teaching writing through mini-lessons and units of study, the third and sixth grade students were using laptops at their own desks, to compose their pieces and also to publish manuscripts written out in pencil or pen. To accomplish this, students were using mainly two programs, Microsoft Word and PowerPoint.

The literacy coach at Wawona middle school in California worked with teachers extensively to implement a lesson design model in order to increase student learning in English Language Arts, mathematics and science classrooms. Prior to the implementation of the lesson design model, the teachers spent a large amount of their fifty-minute periods reviewing homework and reteaching the learning objective from the previous day.

The teachers let go of reviewing homework during each period, and instead focused on the teaching of new concepts in engaging and hands-on ways, this included using technology to project images, streaming videos and information from websites to enhance the lessons. This enabled the teachers to deepen their teaching, encouraging students to interact with their learning, rather than just sitting and listening while the teacher delivered a lecture. This deepening of instruction included student writing. Students in English, mathematics and science

courses used journals to record learning and take notes. This was new for both the teachers and the students. Students wrote exit tickets about what they learned during the class period and wrote short exercises to prompts; in the past, they didn't write at all.

Your Turn: Directions for Preparation and Implementation

A plan is required for teachers to begin teaching writing to English learners using technology for support and writing production. The teachers at the schools involved in the implementation of these strategies began by working in grade level, or department, groups. These groups focused on meeting the needs of the English learners in language acquisition and developing a school wide writing program. To implement the strategies presented in this chapter, the focus does not have to be on a school wide, or even a grade or department implementation, a teacher can implement on his or her own. However, when teachers work together in the instruction of English learners, they have greater support systems for themselves and for their students.

Preparation included organizing a writing program and organizing writing materials, including computers and needed software. The teachers began by organizing by creating a writing curriculum designed around units of study. The curriculum development included an examination of standards to clearly understand what students were to know and be able to do by the end of each grade level in writing. The standards guided instruction and focused the assessments. Teachers also examined student assessment data in English language acquisition to know student acquisition levels, and to understand deeply the needs of each student in language development. These findings were incorporated into the daily writing lessons.

Additionally, the teachers prepared for the writing program by gathering computers and printers allocated to different locations around the schools, and placed an allotted number of computers and printers in each classroom. Students did not leave the classroom and go to a computer lab to write, they stayed in the classroom and the computers were considered as natural to writing as paper and pencils.

Teachers focused on implementation by gathering together at least once per month to examine samples of student writing produced in each unit of study. Teachers and coaches would examine student work, including learning journals, notebooks and writing assignments. From the examination of these writing samples, the teachers would modify lessons and plan for intervention if students were not showing adequate growth. This initiative led to increased student learning as evidenced by student ability to write in content areas. While it was not available

at the time, applications like Google Drive can help teachers save time by sharing these documents electronically for reading and analysis. It is also possible to upload lessons plans designed for differentiation or modification to a teacher-designed and teacher-owned website to share with other teachers.

Your Turn: "Just Do It", Actions for Preparation and Implementation

Several action items arose from the experience of these teachers. First, implementation in all schools involved revolved around a simple caveat, "just do it." The teachers found that they could get too involved in talking about, or planning, writing instruction and it helped them to dive in and experience writing with their students.

Teachers focused on articulating expectations for learning based on standards. The teachers in these schools planned with one another units of study in writing and based these units on standards. They knew what they wanted students to know and be able to do because of instruction in and experience with writing. Additionally, teachers prepared for the use of technology by organizing available technology at their school sites for teacher and student use. Devices like computers and interactive boards were purchased, or taken out of storage, and put into classrooms. Teachers also prepared for technology use by teaching one another how to use the equipment effectively for instruction.

Teachers conducted the writing lessons they planned; they provided protected time for writing and used the technology available to them and students. The teachers went beyond planning and took action, and then they held each other responsible in their teams for maintaining action throughout a school year.

Teachers focusing on implementing writing instruction for English learners through technology can learn from the experiences of these teachers. Recommended actions include:

- Articulation of expectations, including memorializing the expectations and plans
- Creating writing units and distributing to all members of a team
- Working in teams to examine standards, write and assess student writing
- Working in teams to examine technology availability and use.

After conducting a planning phase teachers will need to focus on implementation. Steps taken by teachers involved in the initiatives discussed in this chapter included:

- Taking action each day as planned
- Providing and sticking to plans for protected writing time
- Reflecting upon action taken in writing instruction, time for writing and technology use to support writing.

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Chapter 10

Technology and Writing Instruction: Three Cases in a Title I Elementary School

Beverly McIntyre
The University of North Carolina at Charlotte, USA

In the corner of Mrs. Conner's kindergarten classroom, Emily is busily engaged in uploading pictures from a digital camera into one of the classroom computers. "I'm ready to put in my pictures of the elephants. I have one of the momma elephant hugging her baby," she states to her best friend, Trevor, seated at a nearby computer. Trevor leans toward Emily's computer. "Are you going to use that neat picture from the Internet, too? Mrs. Conner showed me how to download it into the story, and I can show you." Then, returning his attention to his own computer, Trevor murmurs, "I have to find one more picture on the Internet, and then I'll be ready to print."

In Mrs. Davis's kindergarten classroom, a student is putting the finishing touches on a drawing of a giraffe under a sentence she wrote about the animal. She finishes and goes to stand behind a classmate's desk. "What's your animal, Jeremy?" Jeremy replies that he was supposed to be writing about the zebra, but he hasn't started working on it yet. The zebra he saw in the zoo was asleep, the pictures in the classroom books are uninteresting, and Jeremy just doesn't know what to write on the paper.

In both of the classrooms above, students are writing about an animal they saw during a field trip to the zoo. Both teachers prepared their students for the trip by filling the classroom with books and pictures of zoo animals, which they read aloud and discussed with the children. Both teachers provided appropriate scaffolding for the students as they worked through the writing process. However, the students in Mrs. Conner's classroom are using digital tools to produce their writings.

Research shows that technology has been slow to find its way into classroom instruction (Yeo, 2007), even in technology rich environments where access is not an issue (Palak & Walls, 2009). This is unfortunate because today's youngsters are engaging in sophisticated communication in digital formats, many times multiple times per day, outside school. They commu-

nicate and collaborate through cell phones, social networking sites, blogs, podcasts, and share music and video files (National School Boards Association, n.d.). It is understandable that students would want to apply these same digital formats to communication which takes place inside school.

What factors influence teachers' decisions about whether or not to use technology in their writing instruction? What digital tools are being used in elementary school writing classes, and how are they being used? How can teachers who want to integrate technology into writing optimize their instruction? The aim of this chapter is to examine the use of technology in the writing instruction of three teachers in one elementary school thereby giving insight into these and other questions.

This chapter is based upon case study research which was conducted by the author at a low income Title I elementary school, Smith Road Elementary. The school was chosen, in part, because of its Title I status, and in part because it is technology-rich, thus eliminating the failure to integrate technology due to lack of access. The participants, a kindergarten teacher, a third grade teacher, and a fifth grade teacher, had Smartboards, scanners, and at least three computers in their classrooms which were networked and connected to high speed Internet. The school featured two computer labs and multiple digital tools, such as digital cameras with video capability and iPods, available for teachers to check out.

Integrating Technology into Writing Instruction

Ways Digital Tools Were Used in Writing Instruction

Despite the availability of digital tools, the case study teachers did not integrate them into writing instruction often, and their use was limited to either teaching or facilitating the writing process, which was still largely print-based. For example, the Internet was used as a source of ideas, information, and illustrations for writing, and Inspiration (Inspiration, 2012), software designed to aid students' prewriting through the creation of graphic organizers, was used to organize ideas. Digital cameras were sometimes used to take pictures of things students planned to write about or to produce photos for illustrations. The Internet and the Smartboard were often used together for writing instruction. Not only was the smartboard a tool by which to display Internet sites, but it was especially useful when teachers wanted to model the writing process for groups of students. Generally, individual students composed on paper, sometimes transferring their composition to the word processor so that it could be printed.

Barriers to Technology Integration

Perceived Barriers

Barriers to technology integration, such as a lack of time, funding, a lack of professional development, and high-stakes testing, are well documented (Hutchison, 2009), and it was no different for the teachers at Smith Road Elementary. The case study teachers identified these same barriers as factors which influenced their decisions about whether or not to integrate technology into writing. The perceived barriers appeared to affect the both the ways and the frequency with which they utilized digital tools in their writing instruction.

A shortage of technology funds proved to be a major impediment to technology integration. This was the primary reason students did not use word processors for composing. Either there were too few computers in the classroom for students to share or printers were broken. Teachers believed there was no point in using word processors if students' writings could not be printed. Both computer labs were usually filled with students working on standardized test preparation. Consequently, students composed on paper.

Both upper grade teachers felt that standardized testing was a barrier to technology integration. The schedule was designed to allow time for classes to utilize a computerized test preparation program. This, in turn, shortened the literacy block and tied up the computer labs. Additionally, the fifth grade teacher perceived pressure from site and district administrative offices to structure her literacy block around teacher-led test preparation activities and commercial scripted programs aimed at reinforcing reading skills. The perceived pressure and shortage of time were enough to squelch plans to use digital tools in ways other than to speed up the traditional print based writing process.

Indirect Barriers

There were two barriers which indirectly hindered teachers' technology integration, the school's central storage of certain digital tools and the type of training teachers had received in the use of instructional technology. Teachers often opted not to use the digital cameras, iPods, and other tools stored in a central location because they did not have time to travel to the storage location to schedule, retrieve, and return the tools.

The type of professional development in technology use affected the ways and frequency with which teachers used instructional technology. The kindergarten teacher, who integrated technology the most frequently, had participated in an intensive year-long training which not only

placed digital tools in her classroom, but provided monthly training on their operation and instructional application. The hands-on training included on-site mentoring and technical support. This teacher provided opportunities for students' writings to be situated as social and literacy practices on two observed occasions; once when her students used social media for publishing and again when students coached one another through the writing process as described in the opening vignette. In contrast, the other teachers each had fifteen hours of technology training which focused only on the operation of digital tools. The fifth grade teacher, who used an iPod in her personal life and wanted her students to use the school's iPods, indicated that she had no idea how to use them in instruction. It appears that the technology training for these teachers did not increase the frequency or level of integration of digital tools unless it included support and a focus on how to apply the tools in an instructional capacity.

Pathways to Increased Technology Integration in Writing Instruction

Overcoming Barriers to Technology Integration

Given the prevalence of communicating in digital formats in the worlds beyond school walls and the inclusion of technology in the Common Core State Standards for writing (Common Core State Standards Initiative, n.d.), it becomes increasingly important for all stakeholders to find ways to reduce barriers to the integration of digital tools in writing instruction. Case studies such as the three described in this chapter can shed light on ways those barriers might be reduced. Therefore, this section is divided into suggestions for things teachers, administrators, and teacher educators can do to facilitate the increased use of educational technology.

Administrators

Establish a unified school or district definition and vision of technology integration that would produce cohesion and consistency in instruction. Research reveals that many teachers have only a vague idea of what technology integration should look like in the classroom (Hutchison, 2009). The vision should include a focus on the use of digital tools to acquire twenty-first century workplace skills such as collaboration and communication and not just the mastery of operational skills.

Keep abreast of the tools and training that teachers need by putting into place an ongoing needs assessment and making it a priority to meet those needs. Make sure the assessment surveys which tools teachers would actually use in instruction, as well as aligns with the school or district vision of technology integration. It may also be beneficial to allow teachers input with class scheduling in an effort to allot adequate time for technology integration.

Evaluate whether the purchase of small numbers of a wide variety of digital tools for a central check-out system or the purchase of larger numbers of a few basic technology tools for teachers to keep in their classrooms would make it more likely that teachers would use the technology in instruction.

Administrators and Teacher Educators

Training should help teachers develop a clear vision of what technology integration in writing instruction looks like. Teachers who frequently integrate technology report that their instructional decisions are guided by a vision of what ideal technology integration should look like (Lee, 2006). When planning training sessions there should be a focus on helping pre-service and in-service teachers know how to integrate digital tools in their instruction in ways that will enable them to accomplish curricular objectives and to situate students' writings as both literacy and social practices. For the most part, the teachers in the case studies described in this chapter used Web 1.0 tools as a means of replacing traditional print-based activities with digital activities rather than as a method of transforming writing into opportunities to communicate and interact in digital environments. Professional development should not only introduce teachers to ways of integrating Web 2.0 tools, but also provide on-going support in the classroom so that teachers feel comfortable and confident in providing students those opportunities. Recognize that part of supporting teachers in their quest to integrate technology includes providing them with the time to explore and become comfortable with new instructional tools that may also require changing teachers' roles in the classroom.

For school districts located within a reasonable distance from a college or university, another option for technology professional development may be available. Research suggests that mentoring programs established between public school faculty and college students in instructional technology programs can have a positive impact on teachers' technology integration (Franklin, Turner, Kariuki, & Duran, 2001). Pre-service teacher mentors work in one-on-one relationships with teachers providing them with technical support, models of integration, tips on overcoming barriers, and help in conceptualizing a vision of technology integration. Such a relationship is beneficial to both mentors and mentees.

Teachers

Sometimes a solution is as simple as making your needs known. Make a prioritized list of essential digital tools and applications that would make the most impact on writing instruction, and make the list available to your school's principal and technology support personnel. Include a rationale for the need and potential impact. Also make sure your school's parent-teach-

er organization is aware of technology needs early in the school year so as to plan appropriate fund-raisers and ear-mark raised funds for needed technology. Parents and other community members are more likely to donate time and money towards efforts to raise funds for technology if they are made aware of the educational benefits and the ways their children will use the technology in instruction. If a class set of iPods is the fund-raiser goal, then offer student-led demonstrations of their instructional uses at a PTO meeting prior to the fund-raiser.

Seek partnerships with local entities. Businesses may be willing to donate equipment that they are replacing or contribute to schools' technology funds, especially when presented with a rationale for the technology needed that outlines potential future benefits for the business community. Partnering with local colleges and universities can be beneficial. Pre-service teachers may be able to bring in digital tools for use in classroom projects. While this only provides short term access to digital tools, it may provide opportunities to showcase the impact they can have on students' writing. Invite parents and administrators into your classroom to observe students' use of technology.

Take advantage of grants made to classroom teachers for innovative teaching. Search the Internet for local, state, and national businesses and organizations, including professional teacher organizations that fund classroom projects through special grants. There are resources online for honing grant-writing skills as well. It may be beneficial for several teachers with common goals to work together when seeking a grant as many organizations look to fund projects that offer maximum student impact.

There are several digital solutions to the inability to print documents directly from the classroom computer. Save students' word documents to an external flash drive and print them elsewhere, or make use of free online data storage (see the author website for resources). Although larger storage repositories are available for a modest fee, the free storage capabilities are sufficient for most classroom needs. The advantage of using online storage is that it is accessible from any computer site with Internet access, making the external flash drive unnecessary. Most of the sites have file sharing capabilities which makes teacher feedback or peer collaboration easy. Groups of students can collaborate on a document, each one having the ability to edit and view the changes and teacher feedback in real time. Also, with file sharing, the need for hard copy printing can be eliminated as long as everyone has Internet access. This can be an advantage when tight budgets cannot accommodate teachers' copy needs. Fellow students and parents can be given access to read students' writings online. Before choosing online storage sites, thoroughly investigate the site to make sure it offers ample free storage and its capa-

bilities, including privacy measures, fit your needs. Some storage sites also offer online word processing, along with collaborative revision and editing capabilities.

Online writing and publishing sites can also eliminate the need for hard copy printing. Sites offer varying degrees of scaffolding for the writing process and story character development, as well as images which can be imported into stories. Anyone with Internet access can be given permission to read the stories which are stored within the sites. Some sites offer free copies of individual or collaboratively written books.

Setting up a class website is another option for online publishing. In addition to providing a means of communication between parents, the greater community, and the classroom, links can be created to gain access to student writings, videos, and podcasts, which can be uploaded directly to the website. Websites can serve as digital versions of classroom newspapers or galleries of student work. Many sites offer low cost web-building advice and templates, while wix.com and webs.com are sites which offer free basic website-building tools.

To create more time for technology-supported writing in the schedule, integrate writing with content. If content is taught by another teacher, partner with that teacher by pooling instructional time and resources to the advantage of each subject area. Bringing the technology teacher in on the team may also help to "create" additional time in the scheduling by splitting the classes into three working groups. Parents and other school volunteers may also be utilized to monitor groups of students who need to work in the computer lab while the teachers work with students in their classrooms. Additionally, scheduling independent writing time simultaneously with one or more other independent assignments may allow students to access computers needed for writing while their peers are working on other assignments.

Digital communication is a hallmark of the twenty-first century. Email may be one of the premier methods of written communication in social and professional communities, but it also has advantages for the classroom. Emails can be archived digitally, and they provide fast communication with penpals or content experts in various fields around the world.

Increase access to digital tools by taking advantage of your students' resources. Many have their own personal cell phones, tablets, and iPods that could be utilized in class with parental and administrative permission. Students can use cell phones for creating lists or texting questions and comments about class topics or reading assignments. Texting can be a creative alternative to book club discussions and oral discussions. It can be used for students to respond with com-

ments or questions to the teacher during a lesson. Online software applications allow teachers to poll or quiz students via text messages and provide instantaneous results.

Web 2.0 Tools: Getting Started

Writing in today's social and working worlds involves collaboration, and Web 2.0 tools provide opportunities for writers to collaborate in digital environments. Becoming familiar with the use of Web 2.0 tools in your personal life may be a worthwhile precursor to integrating them in the classroom. Join a social networking community, start a personal blog, or open a twitter account to become familiar with the tools. You might also spend time investigating how youngsters and teens use digital tools to communicate and collaborate in their social worlds outside school. Observe other teachers who are already implementing Web 2.0 tools. Ask your principal for permission to travel to nearby classrooms where Web 2.0 tools are being integrating into writing. When observing, pay particular attention to student and teacher roles during instruction. Recognize and come to terms with the idea that integrating Web 2.0 technology may require paradigm shifts that involve transformed instruction and teacher roles.

Seek support in your quest to integrate technology in new ways. Partner with your school or district technology specialists. Find a colleague also willing to undertake the journey. Start a site-based support group and meet regularly to discuss new ideas, successes, and challenges. Form an online support community through a social networking site such as Ning, join a teachers' chat room, or start a blog aimed at sharing experiences and ideas with other teachers who are integrating technology into writing.

If students are not currently using Web 2.0 tools to write collaboratively, prepare them to do so by introducing opportunities to interact and collaborate in their print-based writing. Students can work in pairs or teams to collaboratively produce a writing project. Introduce the social media format in a print-based form by creating a place in the room for students to post thoughts and respond to one another's comments. This could be done as a "read and respond" wall (as opposed to a word wall). A large, easily visible posting area will help eliminate inappropriate posting; however, set ground rules regarding appropriate posting beforehand.

Finally, introduce students to Web 2.0 tools, such as wikis, blogs, or one of the file sharing sites listed above (see the author website for resources). Web 2.0 tools allow writers to create, edit, interact with, and collaborate online. Blogging is a useful tool for integrating content and expressing and communicating ideas. It can create an opportunity for all students to express their

thoughts when class time is short and is an enticing way to encourage shy students to make their voices heard. Wikis offer similar benefits, but are also especially useful tools for collaborative writing projects. Both wikis and blogs afford students the opportunity to apply critical literacy skills in an online environment, a skill which is essential to the twenty-first century. Move to an online word processor which allows your students to collaboratively compose, edit, and revise in real time in or outside of school. Collaborating students can also view teacher feedback in real time. Some online word processors allow contributors to access documents offline as well and offer chat capabilities so that contributors can hold discussions during the writing process.

Putting Plans into Practice

In order to envision the twenty-first century writing classroom in practice, let us return to the opening vignette to explore ways that Mrs. Conner might expand the use of digital tools to offer her students authentic opportunities to collaborate and communicate. Before teaching the unit on zoo animals, Mrs. Conner sets up a classroom website using *webs* tools (www.webs.com) which includes a link to a classroom blog. Rather than every child composing an individual piece about his or her favorite zoo animal, Mrs. Conner groups two to four students who wish to write about the same animal. Using an online word processor, such as zoho docs (see author website resources), on separate computers, the students collaboratively write one piece about the animal, inserting their digital photos, and incorporating science content with facts learned during the field trip. Mrs. Conner provides feedback from a separate computer as the students compose, even if they are working in the lab while she is in the classroom. Other students create a podcast or a photo essay to share the facts they learned about an animal. Those creating a photo essay may be using a website such as *bookr* (see author website resources) to upload their digital photographs and create a photobook. Mrs. Conner plans to upload all written documents, podcasts, and pictures to the classroom website, accessible by the students' school mates, friends, and family. She also chooses to upload their writings to *Little Write Brain, Inc.* (see author website resources) which will provide free paperback copies of individual or collaboratively written stories for the classroom bookshelf or the children to take home. In addition to writing about their favorite zoo animals, the students send emails to the zoo thanking the staff for their visit or asking questions that arose after their visit. Finally, students blog about their experiences associated with the unit of study. Mrs. Conner ensures that the class has ample time to peruse the class website, respond to their peers' work, and reflect upon their experiences.

Parting Words

Whether you are just starting to integrate technology or are looking for ways to take your integration of technology to a higher level, the important thing to remember is to choose a starting point. Start small, be patient, and work your way to more in-depth integration over time. The result will be the provision of opportunities for students to engage in writing practices that prepare them for the types of communication and collaboration that is a part of twenty-first century social and working worlds.

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Beyond Professional Development

Chapter 11

Write, Respond, Repeat: A Model for Teachers' Professional Writing Groups in a Digital Age

Troy Hicks
Central Michigan University, USA

Erin Busch-Grabmeyer
St. Louis High School, USA

Jeremy Hyler
Fulton Middle School, USA

Amanda Smoker
Meridian Public Schools, USA

> *I'm having dinner and drinks with friends, and I have to cut our conversation short to meet with my writing group. They question why I must leave and I tell them about the projects our group is working on, how I value my conversations, and what I take away from the group to put in my classroom instruction. I hate to leave my friends, but I am excited for new adventures and conversation with my writing group...*
>
> *~ Erin*

Erin, like each of us in this group, makes countless choices about her personal and professional life: what enriches and what distracts her, what helps her become a better teacher and when she just needs to take a break with colleagues. As odd as it may seem to others, the four of us approach each Thursday night at 9:30 and make a choice to sit down in front of our computers, to join together in conversation about our own professional writing. While many teachers find enough support and encouragement from their colleagues at school or in other professional contexts, Erin's excitement above demonstrates the possibilities afforded by teacher writing groups.

Overview, Purpose, and Research Base

Our writing group functions as a space for us to reflect on teaching and identify promising practices. We have formed what Whitney describes as "a group of interested and intellectually curious colleagues, critical in their thinking but generous in their intentions" (Whitney, 2012, p. 54), willing to offer praise to one another while also asking probing and thoughtful questions about the writing we share. Dawson and her colleagues articulate the dual nature of relationship building and professional dialogue evident in writing groups, noting that, "As important as that reconnecting time is, however, our discussion of each other's writing is truly at the heart of our meetings. In some cases our writing allows us to work through challenges associated with teaching" (Dawson et al., 2013, p. 97). And, as Robbins et al articulate, working in these groups and "*belonging together* as writers [can help] us generate and, gradually, extend our texts and our thinking" (Robbins et al., 2006, p. 184, emphasis in original). In short, teacher writing groups serve many purposes beyond simply sharing writing, and we appreciate those opportunities.

With our personal dedication to the group reinforced by weekly meetings and a rotating schedule of deadlines, we also believe that using social media and digital writing tools effectively can lead to many changes in our own, and our students', writing practices (Herrington, Hodgson, & Moran, 2009; Kajder, 2010; National Writing, DeVoss, Eidman-Aadahl, & Hicks, 2010). Demonstrating how technology lays the groundwork for collaboration, we can show our students how to use technology more responsibly as writers and responders. In a similar manner to Dawson et al, who describe the way that their writing group members "were able to create a virtual meeting in which we could share writing privately and discuss writing with each other, even though we could not gather in person" (Dawson, 2011, p. 264), we use the video conferencing features of Google Hangout and the collaborative features in Google Docs to support our group's weekly work. Relying on a variety of "new literacies" practices such as distributed expertise and open spaces (Knobel & Lankshear, 2006), we are able to write, respond, and continually repeat the cycle of our work. Moreover, we hope that our work can offer a model for other teachers as they begin their own online professional writing groups. This chapter describes the origins of our group, intermixed with reflections from Erin, Jeremy, and Amanda that illustrate how our shared efforts inform their teaching. Also, we will offer a concise summary of our approach—including the steps involved in setting up and sharing Google Docs and Hangout—so that other teachers can learn from our model.

Write: How We Formed Our Group

> *I want to continue feeding the fire of that passion, and this professional writing group is one way to do that. It continues to make me grow as a writer, but it also provides me with a plethora of ideas that I can steal from my colleagues to help my students grow. I just never want to get to that point in my career where I stop trying to improve myself, always doing the same old thing. It's important to me that I find ways to keep up with my students and the ways in which they are learning.*
>
> *~ Amanda*

Teacher writing groups form in a variety of contexts, for a variety of reasons. The four of us first met through Central Michigan University's Chippewa River Writing Project summer institute, having experienced the power of writing groups during this intensive, four-week experience. As documented by numerous studies of the NWP, teachers who see themselves as writers are more likely to empathize with their students as writers, be more explicit in writing instruction, and work to support their students in a robust writing process (Lieberman & Wood, 2003). Thus, we really began our work at the conclusion of our Summer Institute (SI), when we realized that teachers can be writers, too. Naturally, the SI left us with a thirst for writing, a practice that we knew how to do, but probably felt that because we were teachers, our job was to teach writing, not necessarily write ourselves. As we left the SI as teacher consultants, the palate was whetted and we needed the connection, collaboration, and continuity of what a writing group has to offer.

While many groups find success during the summer, sustaining the group with technology only can be difficult work. While these networks can be powerful, online writing groups can suffer from a lack of regular contact and accountability (Elrod, 2003). Clearly, there is no way that any of us would be able to afford the time or energy to meet on a Thursday night if each of us were driving anywhere from 15 minutes to an hour to meet on campus. So, overcoming time and distance is certainly one element of our group. Moreover, in a group that includes the site director, there's a power differential in the relationships, even if it isn't explicitly stated. Even though each of us is about the same age and has had approximately the same number of years in education, and despite Troy's efforts during the Summer Institute to position himself as a peer responder and not as "the" expert on writing, recognizing that power dynamic is important.

Creating a writing group with an open, collaborative ethos requires careful planning, yet also flexibility. Through sustained conversations with each member of the group, in the winter of

2012 Troy made an effort to invite everyone into the group as equals. An invitation email read:

> *I would like to 'e-troduce' you as a group of friends and colleagues who all share a common interest in writing... forming a writing group that would meet regularly with the aid of Google Hangout...we all have writing project ties, and you are a dynamic group of teachers...*
>
> *~ Troy*

From this initial email forward, our writing group has been fluid, initially consisting of five. Recently, however, two of our original members moved on, and Amanda joined us. Now, our group consists of two middle school teachers (Amanda and Jeremy), a high school teacher (Erin), and a college professor (Troy). Despite these changes, we have been able to maintain norms and have grown with the changing dynamics. The diversity each colleague brings to the group allows us to both examine pieces of writing and enriches our teaching with conversations regarding best practice and what is currently "working" in our classrooms.

> *On Friday mornings (and often, even days later) I find myself thinking about my writing group colleagues because they push me to be a better teacher. However, I struggle with really "selling" this to those that I work with. I know they respect me for my involvement in these types of "extra" job-related choices, but I'm pretty sure they don't get it. As they tease me about needing a hobby or other things to do, all I can think about it how this is a hobby to me. It's truly something I enjoy.*
>
> *~ Amanda*

What, then contributes to these feelings that we share, as well as to our group's success in sustaining our work week after week? Moreover, how are we able to move from process to product, as we have done with this very chapter? Finally, what are the affordances of Google Hangouts and Docs that make them so useful for our work? By describing a typical week's work for our group, the next section of this chapter will make some of these moves more clear. Let's imagine that you are joining us at the tail end of a weekly meeting, and we will describe how the writing and response cycle begins.

Respond: How Our Group Works

10:25 on a Thursday night. Our conversation for the evening is winding down after an hour of discussing a draft of an article for *English Journal* that Erin has begun to write. Having already determined a schedule for this semester a few weeks ago, Jeremy — who is preparing a piece of writing for the next week — will give us a brief preview as well as some focus questions for

us to consider. One of the norms we have established in our group is that the presenting writer will share his or her piece by Tuesday afternoon of the week we are discussing that work. This allows the other three a little over 48 hours to login to Google Docs, read the writer's piece, and begin offering some comments in the margins.

Google Docs offers a variety of collaborative writing features including automatic revision tracking, highlighting, and the ability to easily insert comments in the margin. As a "cloud based" technology, we can each access Google Docs through our Google or Gmail accounts, on a variety of devices, throughout the week. Some of our documents are singly authored, and shared for comments. Others, like this chapter, are co-authored, and we all add out ideas directly into the document without having to email drafts back and forth. (For a brief and humorous explanation of Google Docs, we recommend that you view the Common Craft's "Google Docs in Plain English.")

And, because Google Docs integrates seamlessly with Google Hangouts, we can pull the document up directly in our group discussion window (See Image 1). With this interface, we are able to see one another on camera as well as create synchronous notes, comments, and revisions in the writer's document. Additionally, we are able to use the chat box to have a "back channel" conversation. This back channel conversation often allows us to share ideas from our own classrooms, or provide links to resources that the writer can bring back into her writing. While these conversations do sometimes stray slightly from the topic at hand, more often than not we use the chat feature to offer praise, ask questions by typing rather than vocally interrupting, or share links to relevant websites or articles.

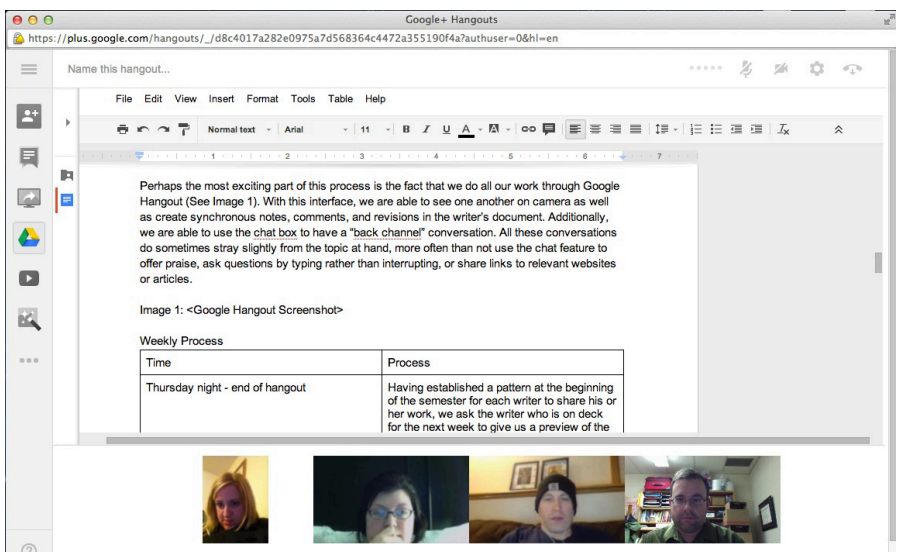

Image 1: Google Hangout Screenshot

Being a teacher of writing, one of the biggest challenges I face from year to year is my students grasping the idea of the difference between revising and editing, In addition, I continue to try and find new ways for my students to be efficient when they collaborate with their writing. Because of our work together, the dynamics in my classroom are different.

~ Jeremy

As we come closer to 10:30, Jeremy describes the work that he is doing on the next chapter for the book that he and Troy are co-authoring. By the time we gather next Thursday night at 9:30, our expectation is that Jeremy will have posted piece by Tuesday afternoon; the rest of us will be prepared by Thursday evening to discuss it. Although there are some exceptions, such as when we might be brainstorming ideas or responding with a close read of a near-final draft, usually we look at works in progress. Each of us takes time on Tuesday, Wednesday, or Thursday to read the document, add comments, and prepare questions for the writer. We have created a shared folder in Google Drive where all our Google Docs are stored and accessible to the entire writing group. To begin our meeting time, all of us are logged in on time and ready to go. We say hello and continue with brief chit-chat about how our week or day may be going. Then, we dive right into looking at a piece of writing. Over the course of the hour, Troy typically acts as a moderator, inviting the author to identify his or her concerns up front, then moving through the text. Depending on the length of the piece, we may invite the author to read aloud, or we may begin targeted discussion about certain sections of the text that we found confusing, interesting, or in need of elaboration.

My students are always fascinated to hear about how I use writing groups and peer feedback for myself. Their looks of shock and puzzlement when they hear that I write outside of the classroom in amusing to me. It's important to me, and to them, that I share bits of my experience as a writer outside of what they see on a daily basis. Doing so has fostered a sort of respect, and it really builds up my credibility with them.

~ Amanda

When discussing and commenting on a colleague's writing, we follow a specific protocol where the author sits and listens to feedback provided by the other members of our group. While listening to the group's feedback, the writer is taking notes on what was said directly on the document. The conversation continues throughout the hour, both through our interactive dialogue as well as the chat room. In addition, we can all see these comments or back channeling. So, when each individual member is done speaking, the author can go back and respond to each person's comments. As noted above, sometimes this back-and-forth happens orally, in the form of discussion. Other times, using the chat feature, we can capture ideas as we are thinking

them if it seems inappropriate to interrupt. Furthermore, the writer can have notes to refer back to at a later time when revising their piece of writing.

After everyone is done giving feedback the author then speaks about the comments or concerns that were presented. As mentioned before, we want to make each other better writers and teachers of writing. We critique in a constructive manner, and upon the completion of listening to feedback and having the chance to respond. As we near the end of the hour, one of us usually asks the writer "What's your plan?" and this leads us to the closing moments in our conversation. Typically, the author will put a timeline is into place for revision and editing. This can depend on deadlines for proposals, who is scheduled to present next, or other scheduling factors. When this has been established, we wrap-up any final comments or questions for the "good of the group" and prepare for our next meeting time.

Though an online writing group can encompass many different entities, the main goal for us each is to grow professionally and personally as a writer. Furthermore, our group can challenge or push each other in developing more effective instructional practices with engaging online conversations about the writing going on in everyone's classroom. Having these conversations start at 9:30 p.m. is not an issue for us as a group. Each of us lead busy lives and with family and careers being at the forefront. Meeting at a later time allows us to be more committed to the group and the process. And, week after week, we continue.

Repeat: Extensions for Writing Groups and the Teaching of Writing

As all writing teachers know, the issue of audience is one that reaches to the core what we do. In our attempts to create "authentic" audiences for our students work, we sometimes succeed and yet often times force artificial constraints upon our students, and ourselves. No one writes with passion when they feel like they are writing simply to meet the requirements of a prompt. For us, then, we are constantly mindful of audience. While any one piece of writing may be meant for the eyes of the group only, many pieces that we are working on are being written for professional publication. This serves to unify our group's attention.

> *I remember I have to write something for this week - how challenging, exciting, and terrifying that is all at the same time because my work will be presented to my colleagues and they will be commenting. The exposure and rawness of this experience keeps me mindful of what my students must experience when they write in class or hand in an assignment. Moments like these make me proud to be a writer and a part of a writing group - to be able to share the emotion with people I trust professionally is something that most teachers are not able to*

experience; they don't have the bond or the chance to bounce ideas off of others in this type of setting. I am fortunate to have this outlet, and input, especially in this educational climate.

~ Erin

Patti Stock argues that teacher's professional writing *can* be a valid form of research, just as valid as large-scale, randomized statistical studies. Teachers can study their own work with intention, and share that work with colleagues and the broader educational community. She asks: "Might we not have much to learn from systematic study of the forms and forums of research in which these professional practitioners work?" (Stock, 2001, p. 111). As an emerging forum of teacher research, we believe that our approach – a weekly writing group facilitated through the use of Google Docs and Hangout – offers a new model for how teacher writing groups can work, and the ways that teacher knowledge can be produced. Moreover, we see three specific implications for our teaching practice: in our classrooms, with our colleagues, and through broader conversations about education.

As Colleagues

For teachers, the personal and professional often overlap, and issues of audience and authority develop. We are plagued by our own self-doubt, often wondering if what we do in our classrooms and, by extension, write about really means anything to anyone. Does our writing matter? In short, yes, it matters a great deal. We have learned that writing helps us develop expertise. Whitney, Anderson, and Dawson et al suggest that

> We might aim to set up writing groups for teachers and help those groups function as surrogate audiences, develop actual audiences for the writing of teachers by developing a forum for their work or, if we act as editors, devoting extra energy to helping teacher-authors develop their pieces (Whitney et al., 2012, p. 412).

We agree. The implications of participating in a writing group, for the most part, are left up to each individual. As a group, feedback is given to assist everyone in the group on his or her quest to create works that will be shared, or not, with a larger audience. The "next steps" become that of the writer, and this may result in publication of the writing. In essence, each of us will get as much out of participating in a writing group as he or she chooses to seek as author, audience, or editor.

Without a doubt, members of a writing group will see benefits from their participation. There is the benefit of becoming a published writer that promotes one's career. Professional networking then occurs, and chances for even more growth takes place. There is a sense of pride that comes with knowing that

others respect you for what you have to say about teaching. In fact, one of the strengths of our group is the fact that we teach at different grade levels and in different school contexts, and we would encourage other teachers to think about choosing diverse writing group members as well.

Moreover, our writing group also serves as a space for us to "fine tune" our own ideas before presenting them to other teachers. Each of us has given presentations under the auspices of the Chippewa River Writing Project, as well as at state and national conferences. We create a metacognitive awareness through our participation in the writing group, thus organizing and synthesizing many ideas all at once. The reciprocity between writing and presenting amazes us; the writing that we create and share with our group can become a component of our presentations and vice versa. Through our writing and our discussions, we grow both as authors and as professional development leaders.

In Classrooms

> *How can I get my students more engaged as writers? This is a question I ask myself every single day as I make my half hour drive to work. As I walk into my classroom and I fire up my computer on my desk, I wonder what new challenges I will face as a teacher of writing. So let's talk about some of those challenges and even how they can be overcome.*
>
> *~ Jeremy*

Another benefit of being part of our writing groups is that ideas that can be "borrowed" for one's own classroom. As teachers, we all seek ideas for best practices, and participating in a weekly writing group allows us to discuss how what is being done in our own classroom, in turn influencing what we are writing about. For instance, Jeremy has shown his middle school writers one of our Google Docs, helping them see a vision for how each of our comments can lead to effective revision and editing for the writer. Amanda cites Jeremy's discussion of a Greek mythology unit and Erin's approach to integrating young adult literature and primary source documents as two key moments from our group that has led to a direct change in her classroom. Finally, for Erin, she can talk directly with her AP students about how our group "reads like writers," working to be analytical in the ways that we respond to one another without being harshly critical. She talks about this as she responds to their work, too.

Though there are not direct lines of causation that can be drawn from our weekly discussions to measures of student achievement, this particular "forum of research" allows each of us to share ideas, test them out on knowledgeable peers, and seek feedback both on our written words and our teaching practices. We work to move beyond simple platitudes and one-size-fits-all solutions, using the time and space our writing group affords to generate ideas, make connections, and reflect on our own writing processes. There is something refreshing and valuable about ending a writing group evening and walk-

ing away with yet another idea for our own classroom.

Through Conversations

> *We all have the desire to be writers professionally and we all want our classrooms to be the best they can be with latest instructional practices. Not only is it a mini professional development for ourselves, but our meetings each week act as a re-energizer for us to finish out our week strong in the classroom.*
>
> *~ Jeremy*

Being a member of writing group can be a support system. "Belonging together," as Robbins et al note above, means that we are not overwhelmed by having to seek out resources related to new curriculum, assessments, and reforms on our own. Just as the summer institute gives us the confidence to take a stand, our writing group acts as an ongoing support to think deeply about these trends. We can go back to our schools and talk in smart ways about teaching, curricular issues, and technology integration. In short, we have time for professional rehearsal during writing group time.

Finally, given the place of this chapter in the book about writing and technology, we also believe that it is worth reflecting on the process we use as a way to communicate and share our group's work. Just as Knobel and Lankshear articulate the differences between an old mindset that values authority, individual intelligence, and tightly constrained spaces and a new mindset that values broad participation, collective expertise, and open spaces, we see technology support our work. Because Google Docs and Hangout allows us to make changes in real time, and sitting in front of your computer at home is quite different than sitting together as a group in a coffee shop or restaurant, we feel more comfortable in our interactions. Revising and editing together – during the week as well as on Thursday nights when we are together – makes our work better, and gives us time to think. Technology, rather than separating us, plays an important role in the way that our group is able to function and how we are able to take ideas into other conversations. For our writing group then, we embrace the possibilities that digital writing tools such as Google Docs and Hangout can offer, all the while recognizing the relationships that hold our group together week after week. We aim to avoid the problems that can tear groups apart, namely a lack of timely response and failure to make substantive revisions (Elrod, 2003) by utilizing technology in procedural, yet flexible ways.

Your Turn: One Model for Forming a Virtual Writing Group

As you consider the ways in which you could form your own teacher writing group, we offer the following summary of our weekly work pattern in Table 1 as one possible guide.

> *Because I am not in the classroom every day, I appreciate how my writing group colleagues help me remember and write about the realities of teaching. As a teacher educator and writing project*

Time	Process
Tuesday afternoon	For our group to function effectively, we have agreed upon a deadline of Tuesday afternoon for the writer to have posted and shared his or her work in Google Docs. Posting the document to our shared Google Drive folder, the writer usually sends a reminder email to all of us with questions and concerns.
Tuesday afternoon through Thursday evening	The responders for the week reader and add comments to the document using the "commenting" feature in Google Docs. These comments might points of agreement, questions to clarify, critiques of an argument, links to additional resources, or just a compliment or two on the work shared.
Thursday night - Beginning of hangout	Each of the responders will share some initial ideas, often captured as comments or notes in the Google Doc. The author will then set an agenda for response, and will generally read aloud his or her work for the group. Most often, Troy facilitates this conversation.
Thursday night – Throughout the of hangout	As our hangout continues, the responders will ask additional questions, take notes for the author while he or she is "thinking aloud," and may also share resources or links in the chat room. While the conversation is generally a give and take, sometimes Troy will moderate and ask one of the group members to respond in a particular manner or say aloud something that was posted in the chat.
Thursday night - End of hangout	Having established a pattern at the beginning of the semester for each writer to share his or her work from week to week, we ask the writer who is on deck for the next week to give us a brief preview of the writing we will review and the types of response he or she would appreciate having from the group.

Table: 1: Our Weekly Workflow as a Teacher Writing Group

We were fortunate to have our summer institute experience as a way to launch our work as a writing group, and we can imagine some steps that other NWP sites or teacher professional development communities might use to move their writing groups online as well. We offer afew tips here. First, as obvious as it sounds, be sure to explain the commitment of a weekly writing group and make sure that potential members are up to the task of writing, responding, and meeting each week. Second, we suggest that writing groups develop goals together, whether for personal writing, professional writing, or both, and make sure that time spent together online is used wisely. Finally, while you have everyone in the same room, give the technology a test a run to make sure that everyone is comfortable and able to access Google Docs, Hangout, and any other tools that you might use.

Because I am not in the classroom every day, I appreciate how my writing group colleagues help me remember and write about the realities of teaching. As a teacher educator and writing project director, I want to help bring voices from the K-12 classroom into the wider conversation about education. Seeing my group colleagues succeed as writers shows me that I am doing my job, and reminds me of how important their work with students really is.

~ Troy

While we may lose a few extra minutes with our friends at dinner, or have to tuck our kids into bed just a bit earlier, Thursday nights have become nights to hangout. As time goes on, technology changes and we continue to grow as writers, our process will evolve as well. Still, as Jeremy succinctly describes our work, "We write, we collaborate, we revise, we edit, and we continue to make each other better."

Acknowledgements

We thank Christine Dawson for sharing her knowledge on teacher writing groups, asking smart questions, and providing us with encouragement as we finalized this manuscript.

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Chapter 12

Comic Life + Writing = Motivated Student Writers: Incorporating Visual Graphics to Teach Writing

Lynda Valerie
Central Connecticut State University, USA

Farough Abed
Central Connecticut State University, USA

"Comic life shows that I am a good writer because I can include a main event and snapshots of the interesting characters."

"Comic life is good for writing a story because you get to customize each scene. It's more fun. It makes me a better writer because you can get ideas from the pictures and it helps me write more."

"It helped my writing because I could picture things better and then write about them."

"It shows that I am a good writer because I have lots of details and actions in my story. I can show, not tell."

"Comic life is fun. It helps you think about what the character would do. You feel like you're in the story making it happen."

"It's good because you can use the pictures to move the story. I had a beginning started, but then I used the graphics to create the rest of the story."

…….quotes from fourth graders about their experiences with Comic Life

The lab was often library quiet; the students focused on their projects and on task. Peer exchanges were aplenty. Some bells-and-whistles sharing, especially among the boys, but there was also much spontaneous peer assistance when some students were trying to figure out how to change specific aspects of their projects. The shared help seemed to reach across gender and friend grouping barriers, and peer exchanges were primarily task oriented, either asking about

features or for feedback on presentations or sharing progress.

Jennifer Amalfa wasn't quite prepared for her urban fourth grade students' response to her mini-lesson on incorporating visual graphics into writing narrative stories. They couldn't wait to get started!

Overview, Purpose, Research Base

Several Central Connecticut Writing Project (CCWP) Fellows have incorporated Comic Life Software to enhance and extend student writing. These teachers were initially introduced to the software during the summer professional development institutes offered through CCWP. They, in turn, have introduced the software to colleagues and students in their schools and districts. In this chapter, we review their ideas on how integrating visual graphics and writing instruction facilitates students to grow as readers, writers and thinkers.

We know the benefits of writing well. The joy of writing and writing well go hand in hand. Students make use of writing for expressing, learning, thinking and communicating. We also know that motivation plays a central role in getting students to write. If we can motivate students to write, they will not only develop their writing abilities but will improve their thinking and learning achievement as well.

Several strategies help motivate students to write. Literature on motivating students to write includes: writing for authentic purposes (Frey & Fisher 2010); providing choice (Daniels 2010); utilizing creative play (Williams 2009); applying Twitter style entries (Andrew 2010); adapting write-talks (Wilson 2008); producing pod-casts (Goodson & Skillen 2010); writing screenplays (Bedard & Fuhrken); and remixing old and new literacies (Gainer & Lapp 2010).

Many current solutions to motivating students to write offer a technology tie-in. The National Writing Project book, *Because Digital Writing Matters*, indicates that the latest digital technologies have vastly expanded the possibilities and formats for writing. Embracing digital writing opens boundaries to include multigenre and multimodal writing and requires an increasingly participatory culture as writing activities shift from individual expression to community involvement requiring such skills as multitasking, negotiation and visualizing.

Incorporating visual graphics and images with text may serve not only to motivate but aid in developing visual literacy, an ever-increasing component for our present day, visually inundat-

ed student population. Britsch (2010) advocates that incorporating visual communication projects may be especially advantageous for English Language Learners. The multi model aspects of digital writing are apparent. In discussion strategies of visual design, Welch (2010) states that the audience and the subject matter determine design decisions, which parallels discussion of voice in writing instruction classes. Other overlays include discussion of word choice, clarity and correctness. Writing offers syntactic, grammatical, and lexical resources; speech offers tone, pitch and intensity; image offers resources of color, space, movement and spatial relations. When viewed in this way, the benefits of incorporating visual images and text seem more obvious than ever. Gorman and Eastman (2010) describe classroom opportunities to link images with literacy text and create character collages that deepen understanding and meaning for students' reading and writing.

Reading and creating comic books also motivates writers and develops visual literacy. Educational literature supports inclusion of reading and writing comics for many purposes. In addressing some comic serotypes, Cary (2004) explains that today's comics are published in many genres including mystery, fantasy, romance and western but also war, history, biography, and contemporary fiction. Comics are intended for viewing across all grades. Carter (2009) explains that by acknowledging that there is a process behind the production of comics and asking students to consider the process and even engage in it, teachers help students build crafting, composing, viewing, and visualizing skills. The computer screen becomes another surface for encoding information and expressing ideas.

How Do I Do It?

Features

Comic Life is an inexpensive software program with extensive educational applications that can assist teachers and students in becoming fluent in digital graphic writing. Students learn to tell a story or explain a process or problem using both pictures and text. The pictures and text are placed in comic-like page layouts and presented in various designs that enhance style, mood and tone. Like any new software, Comic Life takes some playing with to become proficient. However, it is extremely user friendly, even for technology novices and technophobics. For tutorials, click on YouTube, keywords Comic Life, for explanations of each of the four features.

- The first feature is an assortment of page layout templates to choose from such as brick, pillars, diamond, diagonal and interlocking. Another open option is available to customize and resize any layout. Different templates can be selected for each page.

- Once a template is selected, the next step is to add digital images from personal pictures, image libraries or individual digitized drawings and illustrations.
- The third feature is for modifying the image with myriad style and filter choices. Filters can turn digital pictures into a variety of hand-drawn-looking graphics to enhance the comic appearance of the work. Images can be aged, shadowed and highlighted.
- Captions are crafted with tails to create thought balloons, or speech boxes or straightforward additional annotations. There are various style thought balloons to convey different messages. Text can be colorized, shaded, stretched, scaled or outlined to produce desired effects.

Introduction to Students

Once teachers are familiar with software features, they introduce their students to the software, providing pictures and text so the students can practice the functions of the program. From second graders through high school, digital-native students quickly gain access to the program's features. Pictures that work well for this assignment may be a photograph of a famous personality, a place picture (farm, Main Street, park) or an event (sports, fair, rally). Provided text is kept to a title, one or two speech balloons and a caption. Everyone works with the same pictures and same text so that students focus on software feature variations. This quick one-page activity also allows time to engage the wow factor. Students, especially boys, need time to try all the bells and whistles.

First project, step by step

After the first one-page, get-acquainted assignment, students use Comic Life as a creative option to represent their writing. An effective initial project is a short personal narrative. Students begin by writing the text. The storyboarding process is next which entails planning page layouts with boxes for images and text. Starting from a blank page, students need to think through which layout best characterizes their emphasis and/or sequence of ideas. They have to consider how each image interacts with others on the page, not only in representing their story, but also in terms of size, color and shape. Text boxes provide space for descriptions, fact lists, explanations, or captions. Thought balloons with a variety of tails can be created for dialogue to communicate information, move the story along, add humor or express emotion. Additional style choices with fonts, colors and textures help to further customize students' text and design. Each decision requires the student to take into account what and how the message is communicated. The final project may be printed as classic comic book or digitally published on a class website.

Lessons Learned

The personal narrative assignment allows students to tell a story while learning the possibilities and challenges of digital storytelling. The lessons learned from this assignment are incorporated into future Comic Life projects. First, not all pictures are created equal in terms of cutting and pasting. Pixel quality is essential. Students initially find that while pictures may enhance a story, text drives the message, and therefore, it is text that needs to contain sufficient supporting detail. Students may initially come up short on personal narrative text. Utilizing storyboarding gives students an opportunity to plan ahead and visualize each page and helps ensure adequate, appropriate text and images.

They also learn that not every story is best told through Comic Sans or Green Fuz fonts; similarly, a Warhol filter doesn't always authentically portray a Civil War soldier. Discussions about word and design choices help students discover nuances of history, art and language. While Comic Life may present itself as creative play, students engage in much academic work in the process.

After the personal narrative project, the gates open for numerous content area applications. Timelines (history, events, sequences), historical biographies, character analysis, instructions (step by step, how to, lab procedures), dialogue punctuation, and summarization are just a few possibilities.

Extensions

Comic Life can be employed in teaching for meeting the writing needs of particular student populations. Katie Church, a CCWP Fellow, utilized the Comic Life format to create social story posters with her K-2 special needs students. She began by having a focus idea for the poster such as how to walk in the hall or how to ask someone to play a game. She brainstormed with the students on the how-to steps for a given situation. She then practiced the steps with the student to model appropriate behavior. When the student demonstrated the model behavior, Katie took pictures to use for the social story poster. Next, she and the student selected a theme and layout for the poster in Comic Life. The students inserted the pictures and input the text from the brainstorming activity. After final edits, the poster is printed. The smiles on the students' faces in the picture were a story in themselves. The students can create posters for various social situations. They can create a book about how to behave in school or their classroom. Posters may be displayed around the room to give students visual reminders of expected behavior and classroom routines.

An additional extension of utilizing Comic Life is as an adaption of write-to-learn activities. If the process of writing helps us enrich and extend our learning, creating an image may help students to understand and remember vocabulary words. Students take just one word and apply font, color style, and page formats to illustrate content areas like freedom, osmosis and trustworthiness. CCWP Fellow Glenn Mason is comparing student results on vocabulary reviews for words studied traditionally and those studied using student created comic illustrations.

One more extension may be especially pertinent to English Language Learners. Using the idea of illustrating a word through color, font and shape will help differentiate shades of meaning and/or add variety in writing. Examples include: verbs such as walk, saunter, and stroll or variations with adjectives/adverbs such as frantic, leisurely, dawdling and sluggish.

Examples from the Classroom

Utilization of visual graphics was implemented in three schools in two different communities. One urban district introduces myriad literacy improvement initiatives in a constant struggle to narrow the achievement gap. The other community is a small suburban town that also consistently works at improving student achievement. Each project began with students completing surveys on their motivation to write. Comic Life software was introduced, followed by assignments and activities that incorporated visual graphics. Students repeated surveys on motivation to write after visual graphic projects were completed. Each of the three schools collaborated with university faculty from the Educational Technology and Department of Reading and Language Arts.

Washington School: Students introduced to Comic Life at university

An education technology graduate assistant, Nicole Bishorpric, conducted three three-hour, hands-on Comic Life workshops with a fifth grade class that came to the university and worked in the technology computer lab. The first class was an overview of the software and discussion of its purposes. Students were provided with pictures and text so they could practice the functions of the program. For the next phase, the classroom teacher and students worked on preparing a personal narrative text and finding pictures to support their text.

On the second university visit, students came with text and graphics on thumb drives. Bishorpric reviewed features of software and students were then able to experience the interaction of visuals and words and how they may enhance, influence and change meaning and message. Students experimented with variations in color, font and space arrangement to increase the

impact of their content.

The class prepared for the third university-based day by researching a historical figure, writing an essay and finding appropriate graphics through the Internet, or scanning pictures, maps, graphs from books or source documents. Each student was allotted two pages to highlight, through text boxes, captions, speech bubbles, and pictures, an individual's contributions to the American Revolution. The pages became a bound class book.

Evaluation criteria was developed and shared with students. At the end of the third day, all students displayed their pages by participating in a museum walk. The room was initially quiet as they inspected their classmates' work and then became festive as unprompted appreciative comments were exchanged.

Bishorpric interviewed students for their reactions and thoughts on writing and writing with visual graphics. Students reported that this form of writing allowed them to be more creative, and it was easier to tell the story with the support of graphics. Many students shared that they would like using technology in their learning, especially in subjects that aren't their favorite.

Vansky School: Students introduced to Comic Life at school with visits by university faculty. Jennifer Amalfa, another CCWP Fellow, implemented Comic Life in her fourth grade writing class. The visual graphics project was incorporated initially through whole group instruction, then continued as independent writing to develop text for narratives and followed up in weekly computer lab time. Similar to the project at Washington School, the initial activity was for a personal narrative, but this one focused on family vacation time. There were photos aplenty available through either family cameras or the internet to portray: beaches, Six Flags Amusement Park, camping equipment, city landmarks and countries flags, along with barbeques, hot dogs and ethnic specialties. Serena featured the Jamaican flag, tropical flowers, Caribbean beaches and Jamaican meat patties. Brandon had pictures of the pop-up trailer along side his uncle's house in his rendition of *The Relatives Came*. Chadae added NYC skyline photos to her family snapshots taken in Times Square, Central Park and Ground Zero.

The survey results would support that students' motivation to write clearly improved during the year. While many factors may have contributed to the change, the visual graphics project was the one new initiative for the year. Student comments verify that the project utilization met the purpose of motivating students to write.

Mohegan School:

Students introduced to Comic Life at School with Visit to University as Culminating Event.

CCWP Fellow Janice Bouchard was interested in finding out how the use of visual graphics might be employed in a content area. She, along with the social studies teacher, discussed the project as motivator for writing and/or for developing writing and/ or for learning social studies content. Over a period of 12 – 16 sessions, students were initially taught how to use software and then took their written ideas and stories and found pictures to import into comic format.

The content area teacher commented on the project, "Comic Life (CL) has been an amazing writing tool which has certainly motivated all my students in writing. The students constantly asked when we were going to the lab to work on Comic Life. Many students used the break-out room computers to work on their projects. Even during indoor recess many students used the program. CL has made writing enjoyable to teach because the students were motivated to write and get their thoughts and ideas on paper. I would be able to give students a quick little starter sentence and they would go with it. For example, one day I said, "You were walking in the woods and something began chasing you..." The students were able to take the sentence starter and develop a story. As far as Social Studies content, the students developed a great understanding of learning about a particular explorer and added many interesting and fun facts about their particular explorer. They were able to find info about their explorer and import it into CL.

Janice found CL to be a great instructional tool and motivator for writers. The students enjoyed working on the program and bringing their writing to life. They often came to CL sessions in the computer lab with ideas or a rough draft sketched out and as they searched for pictures and planned out how they would organize their writing. She watched as a student changed her whole story because a particular graphic sparked a new direction for her writing. CL was especially motivating for male students. Because boy's stories are often action packed, CL gave them an opportunity to bring their stories to life.

Bouchard noted, "One comic I read in particular had page after page of effective dialogue and description to accompany graphics depicting the play-by-play of a basketball game. I think this program helped students, the boys especially, bring an otherwise abstract task to life. In terms of learning social studies content, I think students found using CL as a way to present their findings a much more exciting alternative to report writing. I found that many students were able to find symbols and graphics that accurately depicted important ideas and events

in each explorer's life. In conversation with them, it was evident that they had learned about their explorers, as they were able to explain in detail the significance of each graphic. I think CL is an excellent tool to use to motivate and encourage writers."

The students visited the university to share their visual graphic explorer reports. Magellan's Cortez's and Ponce De Leon's deeds and misdeeds were depicted through maps, portraits, routes, timelines and dialogue. Similar to the students at other schools, these fourth graders seemed enthusiastic about their project results.

There was one noteworthy observation that may warrant further study. As they each presented, there was discussion of explorers. The presenter *and* their peers appeared to have ample knowledge of explorers. Usually, students will be able to converse about the one individual that they prepared a report on, but not be so conversant on their classmates' subject. This brought up some questions: "Does the use of utilizing visual graphics enhance the learning of content?" "Did the format of having students work collaboratively to learn software and then design presentations contribute to learning content, not just of their own explorers but their peers' also?"

Bouchard compared pre and post motivation to write surveys to find out if using visual graphics changed student dispositions about themselves as writers and the value of writing. The following numbers reflect the questions for which students reported a more positive response on each question:

Survey Question	% more positive response from pre to post survey.
"My friends think I am _____. (a very good writer, a good writer, an ok writer, a poor writer)"	53%
"I write_____. (not as well as my friends, about the same as my friends, a little better than my friends, a lot better than my friends."	41%
"My best friends think writing is_____. (really fun, fun, ok, no fun)"	41%
"I am _____. (a poor writer, an ok writer, a good writer, a very good writer.)"	76%

"Writing is _____. (very easy for me, kind of easy for me, kind of hard for me, very hard for me.)"	47%
"Knowing how to write well is _____. (not very important, sort of important, important, very important.)"	35%
"When I read my writing out loud in class I am _____. (very happy, sort of happy, sort of unhappy, unhappy.)"	35%

Preparation and Implementation

Preparation: Comic Life can be utilized in several settings. One is a computer lab with each student at computer and the teacher can demonstrate either in front of the classroom or on student screens. A second setting is using classroom computers; the demonstration is the same as in the computer lab with students working in pairs and taking turns at the computer. A third option is using the I Pad version to work one-on-one with a student.

As mentioned earlier, you begin by getting familiar with the Comic Life software. While there are other comic software programs available, we found this one to be user friendly and versatile.

Implementation: (see sample lesson plan)

For session one, select two or three pictures to demonstrate the basics

20 minutes Demonstrate:

- Drag and drop a page layout on to the screen workplace.
- Select pictures and add to layout.
- Show two possibilities for style changes.
- Add a speech balloon and a caption.

25-40 minutes Students Practice: Using the same pictures and text used for demonstration,

students explore feature variations. Session closes with sharing the different styles and text color, font and shape choices that students choose. Another variation for initial practice is a one-page autobiography.

To implement the personal narrative digital story or any of the projects, students begin with their writing. The next step is to use their text for the storyboarding process.
Search, photograph or draw images that support and move story along. Text and images are brought into the Comic Life workplace where students can use the program's features to creatively present their writing.

A final step is for presentation within the class, or a wider audience with the school, family, or community. Possible formats are a museum walk, a printed class book, posters, or performance presentations.

Conclusion

The ability to write well helps students as thinkers, problem solvers, and creative beings. However, it is a sometimes a tremendous challenge to motivate students to engage in the often daunting process of becoming effective writers. Based on the experiences with these three classes, incorporating structured utilization of visual graphics with writing activities does appear to be a promising approach for motivating students to write. Student awareness of the component of good writing and, in one school, the learning of social studies content may also benefit from including visual graphic elements. Writing does help; apparently, visuals help, too.

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Sample lesson plan

CCWP Lesson Plan Template

Title: Creating Social Stories Using Comic Life
Lesson Author: Katie Church
Grades: K-2
Estimated Time: 30-45 minutes (extra time needed for taking pictures of the students)

CCSS Standards:
- **W.S2.K-2**
- **W.S5.K-2**
- **W.S6.K-2**
- **W.S7.K-1**

Preview:
Overview: (use synopsis)
From Theory to Practice: Our students live in a world where information comes to them in visual and auditory form much more frequently than in written form. Thus it is not surprising to see evidence that they sometimes have difficulty making the connection, via imagination, between written word and the experience that it represents. Comic Life can be utilized as a tool, driving conversations about social situations while creating visually stimulating comics that can be applied in all aspects of their day.

Resources and Preparation
Materials: • Comic Life Application (i-pad, i-phone, or computer version) • Photos of students
Technology: • Comic Life • Computer, i-pad, or i-phone • Digital Camera
Websites: • http://www.comiclife.com/ • http://www.autism.org.uk/living-with-autism/strategies-and-approaches/social-stories-and-comic-strip-conversations.aspx • http://simmonsatshowcase.wikispaces.com/ComicLife
My Resources: • *Add life to social stories…Comic Life!* http://growingkidstherapy.wordpress.com/2012/06/29/add-life-to-social-stories-comic-life/

- *What are social stories?* http://www.thegraycenter.org/social-stories/what-are-social-stories

Instructional Plan
Objective: - Students will actively participate in the construction of social narrative posters using Comic Life.
Session 1: The teacher needs to have a focus idea for the social story poster. It could be anything from “How to walk in the hall” to “How to ask someone to play a game.” - The students and teacher brainstorm the “How to” steps for the given topic. - The students and teacher then practice these steps, modeling appropriate behavior. While the students demonstrate the model behavior, the teacher should be taking pictures to use in the social story poster. - The students and the teacher select a theme and layout for their poster in Comic Life. - The students insert the pictures and input the text from the brainstorming activity. - The students make edits and formatting changes to the poster. - Print the poster.
Session 2 (if applicable): Further editing may be required.
Extensions: - The students can create posters for various social situations. They can create a book about how to behave in school or their classroom. - Posters may be displayed around the room to give students visual reminders of expected behavior and classroom routines.
Modifications: - Students who have difficulty with fine motor control can use a touch screen computer or an i-pad to select the pictures and for formatting of the poster. - For use with an entire class, the teacher can utilize a document camera and smart board.
Student Assessment/Reflections: - With the assistance of the teacher, the students complete a survey assesses their feelings about the activity and how making the poster with help them with the target behavior.

Evaluation

Name

Project Title

Directions: After the completion of your project, examine your own work in terms of each of the following criteria. Place a check mark in the proper box across from each criterion then write the total points on the bottom.

Grading Criteria	Excellent, Ready to Publish	Effective, Almost there	Developing, Still needs more work	Not yet, Back to the storyboard
Neatness				
Appearance				
Spelling				
Organization				
Appropriate Information				
Apt Pictures				
Use of Text Boxes				
Use of Picture Captions				
Use of Lettering				
Appropriate Text				
WOW Factor				
Points: Self-Evaluation				
Points: Instructor				

Developed by Nicole Bishorpric

Composition Coursework

Chapter 13

Paperless papers: Errors and expectations in the electronic era

Jesse Kavadlo
Maryville University, USA

Introduction: Asking the right questions about technology

Academic writing is so strongly associated with its medium that we have grown accustomed to using the metonym "paper" when of course we mean the work printed on it. Yet as schools across the country move further toward web-assisted and online classrooms—like "paper," the word "classroom" may one day be entirely an interface metaphor, like "carbon copy" or "cut and paste"—more students are uploading their word-processed documents for instructor reading and responses, paperlessly and electronically. I was struck, then, to hear colleagues say that they do not read these paperless papers online at all, instead printing them and then reading and marking the hard copies. I was more surprised to find that even the instructors who do not resort to printing still have not changed the ways in which they read or respond to these online papers. Even the invaluable *Teaching Writing Online* (Warnock, 2009) suggested that "creating the written global comment isn't much of a worry in the [online writing] course. You can do what you normally have done, except now you can do it in an e-environment using electronic tools" (p. 129).

Instructors sometimes lament that assessing student writing is, to quote my favorite young adult book series, a series of unfortunate events: piles of (unnecessarily) printed pages that instructors don't want to slog through, late-night jerry-rigged by students who don't want to write them. But author Lemony Snicket's next series has an even more pertinent title, one that more accurately conveys the problems of assessing student writing electronically. In our impulse to respond online, we have asked many questions: how can we save paper and become more sustainable? How can we save our students' time, and our own? How can we foster and facilitate distance learning? How may we use new technologies to reproduce or approximate what we might otherwise do face to face?

Snicket's second series is called "All the Wrong Questions." And while these and other questions may be good for institutions to consider, they are the wrong ones for instructors to ask

of themselves. The questions can be technological, environmental, or managerial. But the ones that matter most must be pedagogical. While futurists see online education as inevitable, necessary, and worth pursuing for its own sake, the pedagogy must drive the technology, not the reverse. For me, the right questions are the write questions: how can instructors respond to student writing electronically in ways that are pedagogically advantageous? How can we respond electronically in ways that are not just analogous to, but better, than what instructors do with traditional handwritten comments, or even word-processed comments distributed to students in hard copy? More specifically, instructors can ask themselves questions about their purposes: what do you want students to learn or demonstrate from your writing assignment? What is the purpose of your response? And what are some of the many discrete decisions that instructors must make in order to provide the strongest, most effective reader reactions to student work?

Purpose: Moving from the practical to the pedagogical

Students, anecdotally according to my own surveys, prefer submitting writing and receiving responses electronically. They say that it "saves trees," a phrase repeated verbatim on survey after survey. Many say they find it "easier." Another wrote, "You can't ever forget to turn it in if you have your computer on you at all times. I think submitting electronically is the best way to submit because we do everything else on our computers, so why not?" There are, of course, practical reasons for instructors to collect student papers electronically: student printers and absences are no longer factors, although connectivity is. Instructors can time or close submission windows, and course management systems time-stamp all submissions, making it easier to reject or downgrade late work. All of the collected work is organized and classified, and it is impossible to lose papers. Students can't forget to include their names. Instructors don't need to spend class time on paper collection and distribution, and it allows for more flexible collection dates and times, so that we can collect the work when we're really going to read it, and return the work precisely when we finish it. If my class meets on Mondays and Wednesdays but I allow students to submit work on Friday, they always imagine that they have more time, not less, even though either way could be true. As one student wrote on my survey, "The professor doesn't have to wait until the next class to give the paper back." And, if the software is available, it is easier to detect plagiarism. Overall, it saves time and saves paper.

But these advantages are not enough. Instead, I am more interested in the pedagogical reasons to collect student papers electronically. Certainly at first, responding to papers online seems different, more difficult, and possibly more time-consuming; one study suggests that "reading from computer screens is tiring for the eyes and about 25 percent slower than reading from

paper" (Nielson, 1997). Yet word processing itself provides the potential for a variety of approaches that hard copy comments on individual papers cannot.

How Do I Do It? Reading student work electronically

Uploaded papers allow instructors to see the paper exactly as the student sees it. Instructors are often baffled by the errors they find in student writing: "Didn't he proofread this at all? Didn't she spell-check?" In some ways, despite the technology, little has changed since 1977, when Mina Shaugnessy wrote her seminal work, *Errors and Expectations.* In it, she explained that basic writers

> write the way they do, not because they are slow or non-verbal, indifferent to or incapable of academic excellence, but because they are beginners and must, like all beginners, learn by making mistakes. These they make aplenty and for such a variety of reasons that the inexperienced teacher is almost certain to see nothing but a chaos of error when he first encounters their papers. Yet a closer look will reveal very little that is random or "illogical" in what they have written. And the keys to their development as writers often lie hidden in the very features of their writing that English teachers have been trained to brush aside with a marginal code letter or a scribbled injunction to "proofread!" (p. 5)

Shaughnessy showed instructors how to take that "closer look," and now instructors have the opportunity to look even more closely at student work on the screen, as opposed to on the page, just as the student saw it, making the work easier to understand from the student's perspective. We can begin with Shaughnessy's rejection of student work as "random or 'illogical'" and use that insight to teach them to improve their writing.

Here is one screenshot from a nontraditional, evening college Composition 1 student. In brief, the assignment asked for a short exploratory draft, the first part of a portfolio to be revised in stages, that finds differences between two similar things of the writer's choosing, a standard rhetorical-mode task.

My oldest son and daughter are two unique people. John is the eldest of four, having two sisters and one brother. Born to Cara Mae Jones and Daniel McCarthy. John stands six foot two, a good two hundred sixty pounds. Always thinking he is a comedian, likes to make people laugh and please others. He is a very forgiving person , likes to stay neutral in conflict. Loves sports , a great baseball player and pretty good softball player. John is in his second semester of collage like mom , struggling a little with algebra, other then john is a good student. With a very confident attitude John can talk to anyone and makes friends easily.

Laura on the other hand is the eldest of my daughters but the middle child too. She was born March 03, 1993, also born to Cara Mae Jones and Daniel McCarthy. Laura is seventeen years old ,weighting about 170 ,She is self-conscious about her weight. A senior in high school. She use to be a great straight A student. She now struggles with all classes , she has no ambition to do anything but sleep. She can be very sensitive when it comes to conflict. But also very vindictive and mean. She is a rebel when is comes to trying things. Being very opionated, she can hurt people with out even trying. Although she can hurt someone she is also a giving person, She would help anyone if she can. Laura isn't very active in sports. Tried softball one season and never played again, not very motivated to stay in sports or activities.

John and Laura are very different people. So different they don't get along at all.

Even on paper, as Shaughnessy forecasts, most teachers will gravitate to the errors, but with the problems underlined (thanks to Word 2007) they're now impossible to overlook. Here are the right-click recommendations, with my clarifications in square brackets as needed:

Born to Cara Mae Jones and Daniel McCarthy→fragment (consider revising)
person ,→person, [no space]
sports ,→sports, [no space]
then [in "other then john is a good student"]→than
mom , →mom, [no space]
old ,weighting→old, weighting [no space]
A senior in high school. →fragment (consider revising)
use→uses
classes ,→classes, [no space]
But also very vindictive and mean.→fragment (consider revising)
is [in "She is a rebel when is comes to trying things."] →it
opionated→misspelled. Word's suggestions: "pointed," "phonated"
with out→without
She→she [lower case)]

The errors, and Word's recommendations, are revealing. First, just as teachers fear, students really do not always pay attention to spell- or grammar-check. Several errors—egregious by the standards of most college instructors—could have been avoided with a right-click. And this student, new to higher education after a long absence from school, isn't sure about formatting and spacing, among other things. It is now clear that this student needs basic information about formatting and tools, an easy issue to address that can help her present a cleaner copy next time.

Of course, instructors could have seen that on paper, too. But for those quick to scream "proofread," or its electronic equivalent, it is also important to notice Word's limitations—the recommendations for "opionated" are nonsense, as any human reader can infer that the writer meant "opinionated" here, and "used," not "uses," for "use." In other words, the admonition to "spell-check" is not the end of the discussion; it is the beginning of one, about *how* to use spell-check. More importantly, the suggestions for "then" and "she" flag trouble spots but cannot correct the problems. Word's recommendations, in addition to missing a number of other errors, ultimately fail to provide the easy solution that students (and instructors) crave. What if this student accepted all of spell- and grammar-check's changes? Mostly, the paragraph would be cleaner—and again, that's good. But there is still a lot of work to do, and even some potential for a strong paper as the student continues. The problem, then, has less to do with the underlined errors than with what instructors can teach students to do with this information.

Seeing the paper electronically, the instructor can help the student use grammar-check to point out the fragments, not only because they're a problem in and of themselves (although they are), but because many of the ideas here would benefit from development, explanation, and clearer relationships. We can use the flagged errors as entry points to analyze which words or phrases would benefit from further example, description, or specificity, rather than just writing such a comment divorced from the student's exact language. Then, the writer can move from sentence-level errors to the larger problem of sorting the information into clearer structures. What, exactly, beyond her children, is the writer comparing? What is she contrasting? What does the writer want the reader to learn from this comparison—that is, what is the larger point and purpose? By seeing the paper the way the student submitted it, the instructor has a much clearer insight into the writer's thought process and problems, but also into potential ways to explain revision possibilities.

How Do I Do It? Responding electronically: Decisions and strategies

Like reading electronically, responding to student writing online, with the possibility for greater clarity, revision, and contemplation, may allow instructors to write and revise comments to students more carefully. And more than the cases for ease or environmentalism, better comments are the best reason to respond to student writing electronically. Yes, it is great if, like me, your student evaluations routinely included the phrase "terrible handwriting," and if students can't read comments, then we might as well not write them. Electronic comments have other clear advantages. They allow instructors to keep a running archive of all comments sent to students. If instructors send responses through email, students can respond easily, by hitting Reply, thus changing what was top-down assessment into the opening missive in an ongoing conversation. I have also found that electronic collection emphasizes the writing process over the finished product. That is, students see printing the paper—even a draft—as the final step and get overly attached to their words in ways that interfere with revision later. When the paper remains electronic, even if I or other students review it, the writer still sees it as a work in progress. This conceptual shift is crucial, since again, when instructors complain about student work, often, whether they realize it or not, they are reading last-minute first drafts.

In that sense, electronic comments simply make best practices easier for the student—and the instructor. Unlike handwritten comments, which instructors have difficulty editing, to say nothing of revising, electronic comments are fluid and easy to improve. Electronic comments allow the instructor's response to have a single clear purpose and a main point—just as a student essay should. They also can help the instructor focus on strategies for revision or future writing projects, providing questions or comments for the writer to consider upon revising this paper or beginning the next one, rather than explaining or defending the grade. Instructors can revise to stay in the third person ("the essay," "this sentence") or first person ("I like…," "I'm having trouble with…") rather than the second person ("you"), which can sound accusing. Very few people would go back and cross out the "you's" in a handwritten comment, but it's easy to revise and replace in a word processing document. As Shaughnessy knew, instructors should avoid single word injunctions that students may not understand, like "proofread," "vague" (which is vague), or "awkward," which in teacher jargon means something very different from student slang. Finally, instructors, especially English instructors, can do what they do well—respond like a good reader and literary critic: paraphrasing and amplifying the writer's best points; indicating where stylistic problems occur but resisting the urge to correct; commenting on grammatical errors when they are connected to purpose, clarity, and content; and most importantly, citing specific passages from the student's work, especially those that present strong but underdeveloped points or that support the instructor's assessment of the writer's work.

This idea of using the student's own language is, for me, crucial. Rather than, again, using single word orders in the margins, as I read I keep an open Word document and continuously Copy (capitalized to denote the word processing command) what I see as significant passages from the student's work into the Clipboard to collect the quotations. Then, when I prepare the comment, I copy all of the student's sentences, insert quotation marks, and form my comment around the student's words. It appears to the student as though I used her words to support or exemplify my own claims, when in fact the process worked in reverse: I wrote the comment to set up and explain why her sentences were important. Using the student's language demonstrates that the instructor is reading closely and personally, but it is also precise without being overly directive. As one student wrote, "Having you quote passages and comment on them gives a direct example of a problem in our paper rather than a bunch of notes on the last page."

In addition to incorporating the student's own words, I also use the Clipboard to Copy and Paste template-style material into multiple student responses. (Others prefer macros, but I find them more time consuming and complicated.) Instructors who find themselves continuously rewriting the same comments on multiple student papers will find templates effective and efficient, especially since many of them can be revised for use in more than one course or the next time the course is taught. At this point, many of my opening and closing paragraphs to students are pre-written and pasted, since I want every student to read them, and including the information in a comment, rather than a public mass posting or email, makes it personal.

Example 1: Individual responses and templates

Here is one example, taken from my first-semester, first-year University Seminar class called "Secret Worlds: Fantasy Novels and their Fans." The assignment is, in brief, the first of three parts asking students to choose and analyze a recurring literary convention in the course novels. I have underlined the copied template material; that is, all students in the class received those same first two paragraphs. Then, notice how the third paragraph sets up a single thesis about the paper using the writer's words rather than trying to list every possible problem, before moving on to questions and possibilities for the writer to consider for the next draft. The comment concludes with another copied and pasted paragraph, about grades.

> Matt,
> First, thank you for your hard work and enthusiasm this semester. I know I'm asking a lot: regular reading, frequent online posts, the weekly wiki work, everyday in-class discussion, occasional shared program work (like the Tunnel of Oppression and up-

coming Maryville Reads book), and now the three-stage term paper. Yet I hope that by now you're seeing the advantages to trying a lot of kinds of projects and communication, and the connectedness between our course theme, our novels' conventions, and the overall skills of critical thinking, communication, and building community—as a class, a college, and a group of emerging scholars.

As I've mentioned, I'm hoping that this project allows students to do a number of things: think about how and why these novels work; combine their own interpretations of the class novels with aspects that we've discussed as a class; and practice working on what could be a big project in small, manageable pieces.

The first part of your term paper sets up the conventions of the threshold: "In the books that we have viewed in our class, they all have a way to get in the secret world, which is the threshold of the story." It's a well chosen topic that allows you to provide and describe lots of examples. And you develop this idea nicely in two ways. First, you suggest that "In each book, the threshold was a normal object." In keeping, I'll add that in some ways, the threshold in Wizard of Oz is less the tornado, even though it technically brings Dorothy to Oz, than the window and door of her house. Hmmm. Why do you think the authors opt for normal objects? And do these objects have anything in common? How might you read "a wardrobe, a brick wall, a tornado, or even a bedroom window" symbolically, as the next version of the assignment will request? You're also on to something interesting when you suggest that "It seems as if Mr. Darling has qualities like Captain Hook." In other words, there are what you might call threshold moments in the stories—not just the portals themselves, but times when the real world bleeds into the fantasy. (It happens frequently in Narnia and, depending on your interpretation, Harry Potter's world as well.) Can the paper expand the idea of thresholds further in this way? It could be interesting and give you more to work with.

In addition, I'd like to hear more from you in class as well as see more posts in D2L (9 authored and 187 read out of 318 total). And keep working on the wiki!
Course grade as of Oct 17: C+
A note on grades: The grade you see here is where you stand now, not necessarily where you will be at the end of the course. If your work continues as it stands now, then what you see will be your final grade. Should the work improve, however, then the final grade will reflect your improved work, unaffected by the grade here. On the other hand, if the work diminishes, the final grade will reflect end of semester work.

Example 2: Collective commenting and public posting

The previous examples assume that each student paper must receive personal, individualized instructor comments. In my writing classes, all major assignments receive comments. In University Seminar, each stage of the term paper receives them. Indeed, many of us are anchored to the notion that a single paper, or every single paper, receives a single instructor response. But this practice is rooted in the medium of paper itself: the student submits a hard copy, the instructor evaluates that copy, and the student gets that paper back, all marked up. But once the papers are removed, so is the need for such exchanges. In my literature classes, students to write short (350-500 word) responses every week, and I have found that individual comments on each paper are less effective, and more time consuming for me, than having students post all of their papers online, where all students then read and comment on each other's work and I comment on the collective body of student writing as a group, again quoting and using the student's own language. (Students also write two longer papers that are individually evaluated in the way that I demonstrated above.)

Here is an example of a shared full-class response from my American Literature: 1945-Present class. That is, each student in the class analyzed a specific passage (which I selected and I provided from Flannery O'Connor's "The Displaced Person" [1955]) and posted it publically on our class Discussion board. After students posted, read, and responded to each other for 48 hours, I composed my own post based on what students had written. This is what I wrote:

> [Title:] Displaced Readers
>
> Excellent job. Taken together, the responses spanned literary criticism, psychology, history, and personal narrative. Many entries also looked very different from each other, which is a good thing.
>
> Yet for all the collective insight, the attempt to solve the story, Karlie begins this way: "This short story was confusing at times. Those were the times I had to go back and reread a few lines just to make sure I understood it correctly." And yes, aspects of the story are confusing: Mrs. Shortley's death, the arranged marriage, Mr. Guizac's death, the priest (whom no one mentioned), Mrs. McIntire's fate. Yet Angel, who seems to have followed these plot points clearly, ends much the same way Karlie begins: "The story leaves me distraught, frustrated and confused." So even if we work through the literary, literal, or narrative confusion and understand the story, readers may still not understand how the story could have come to pass.
>
> Certainly, as Nicole suggests, "Flannery O'Connor, in this depressing yet enlightening

short story, tells of ignorant and obnoxious characters, at the height of which is Mrs. Shortley," even as Kelly provides one possibility for presenting the story largely from her "vantage point," a double meaning that several students noticed: "Once read, it was easier to see where the rage and uncertainty came from, even if it wasn't necessarily agreed with"; that is, we understand the Shortleys, and their world, better, even if we don't agree with them.

One could call O'Connor's technique a kind of literary displacement, then, unless the word "irony" alone covers the many reversals and contradictions of the story, as several readers note:

- "This is, of course, completely ironic, because the behaviors that she attributes to Europeans and the Displaced Person are really a reflection of herself and the culture she lives in" (Lynsey);
- "The family escaped the horrible things going on in the continent, only to meet the same persecution when coming to America" (Ashlee); "The irony is that these quotes we are commenting on reveal exactly not what the "displace" people from Poland were like, but it foretells the behavior of the displaced people in this little southern community after World War II" (Rosa);
- Sara's irony that the quotation says more about the speaker than the subject of the words: "I believe that this particular quote that was thought by Mrs. Shortley says a lot about her personality," echoed by Suzanne: "The heinous acts that went on in the European concentration camps inflicts notion that this brutality is something you might expect 'over there,' where 'they are not advanced as in this country.'"

Indeed, as Taylor notes, the Shortleys grow "more and more paranoid." Erica also points out that the quotation alone on the syllabus out of context seems to indict the Guizacs; in context, however, "I don't think the Guizacs carried murderous ways with them. Unfortunately, some people were already equipped with those characteristics," a point shared by Joby: "The residents on the farm made it impossible for the Guizacs to feel like they were welcome and actually the residents are more like the 'filthy' Europe they are comparing them to." The story pivots on the ironic distance between what the characters say and believe but then what the reader is able to understand about them simultaneously.

Certainly as well, the story's context is crucial. As Mackenzie points out, "Mrs. Shortley's ignorance of the situation in post-World War II America and in the rest of the

world makes me wonder how many Americans shared her beliefs and ignorance during this time." Zach makes a similar point: "The setting of the story is post World War II, probably late 1940s or sometime in the 1950's. I believe this quotation is a reflection of the attitude many Americans had toward Europeans and other foreigners after the second World War." As does Kaitlyn: "For me this quote made me think a lot about how people in the US responded to what was going on in Europe during World War II. The characters in the story believe Europe should be left alone to deal with its own problems and they go on living their lives as if nothing else matters." Travis notes that "Fear is what led to the demise of the farm and the people who lived there"; Justin observes that "Mrs. Shortley views these people (the people from Poland/the hired help), as they are some type of contagious virus that is spreading from Europe to their land."

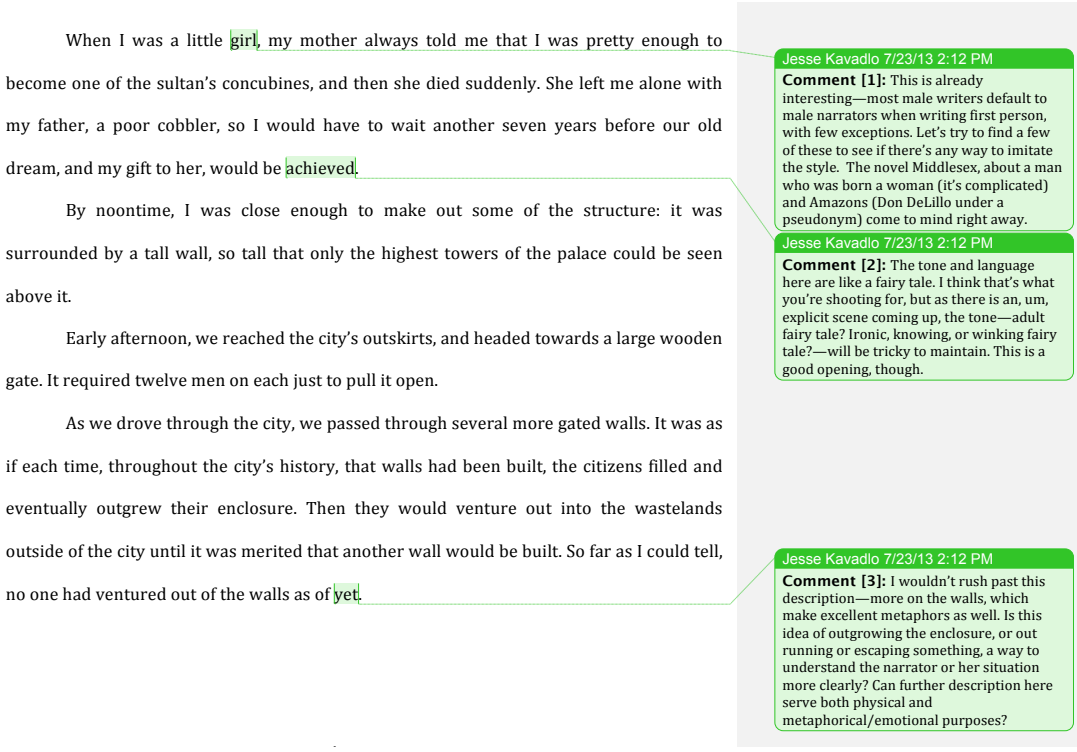
Yet Paige provocatively pulls the story from the mid-century setting into our own: "While reading 'The Displaced Person,' I was thinking how horrible and racist some of the passages, but in the big picture, has our society today changed from this?" Christy says that "At the end of the story Mrs. McIntyre became the displaced person," an astute observation. But can we comfortably leave read this story as a mere, if well done, indictment of a time long past? In nicely personalizing the story, Danielle says that the quotation "brought back memories of my grandfather because he was in the Holocaust." Part of our concern, then, may be the notion that O'Connor, unlike us, was writing in her own time, without the luxury of a hindsight that now bears her out. Even then, O'Connor would probably think that she was describing how people everywhere, any time, treat people unlike themselves—even when those people are, in the end, a lot like themselves.

It is certainly a long and detailed response, and it took time to compose. But notice the way in which it treats the students' writing as literary texts themselves, allowing students to get a broader picture of what they, as a class, have accomplished, while still emphasizing the points that were particularly important to me: the possibility of multiple and contradictory readings, the role of the reader, the importance of language, and the story's context in both the course and the culture. It is also the only response I wrote, as opposed to writing much shorter, less interesting, and less engaging responses separately for each paper. (I do grade each paper individually and share those grades with students every month.) A response like this may seem time-consuming, but it is faster than writing twenty-five individual comments, and for me a posted mini-essay fosters a much better sense of community and engagement with students than the standard barrage of criticisms, injunctions, and grades that students have come to ex-

pect. Finally, since many teachers are trained to select, contextualize, and analyze quotations, a response such as this allows us to use our strengths.

Extension: Global vs. in-text evaluations

So far, my techniques apply to end-of-paper, global, or holistic comments. And I do at this point prefer to have a single, final comment that cites the student's own writing at the end, rather than inserting comments throughout the document, which I find tempts instructors to comment on everything in a disorganized, list-like way, as opposed to taking a focused, thesis-centered approach to student work. Sometimes, however, instructors may have good reasons to insert in-text comments in the margins of a student's writing, as I did in a Short Story Writing Workshop. Here is the opening page of the student's first draft of a semester-long project:



When I was a little girl, my mother always told me that I was pretty enough to become one of the sultan's concubines, and then she died suddenly. She left me alone with my father, a poor cobbler, so I would have to wait another seven years before our old dream, and my gift to her, would be achieved.

By noontime, I was close enough to make out some of the structure: it was surrounded by a tall wall, so tall that only the highest towers of the palace could be seen above it.

Early afternoon, we reached the city's outskirts, and headed towards a large wooden gate. It required twelve men on each just to pull it open.

As we drove through the city, we passed through several more gated walls. It was as if each time, throughout the city's history, that walls had been built, the citizens filled and eventually outgrew their enclosure. Then they would venture out into the wastelands outside of the city until it was merited that another wall would be built. So far as I could tell, no one had ventured out of the walls as of yet.

Here, the student's prose was the point, and my comments on the individual sentences allowed the student to consider the larger decisions—regarding genre, tone, and language—that he would need to address as he continued and revised, not just these sentences alone.

Your Turn

As you prepare for the next time in which you respond to student writing electronically, consider your course and assignment goals, not the technology at all. Here are some questions instructors can ask themselves:

- What do you want these students to learn from the assignment?
- What do you want them learn from your response?
- What do you want them to do next?

Then, begin to explore decisions and possibilities:

- Medium: Will this set of responses work better electronically, or is there some advantage to paper?
- Audience: Should students post these papers for the whole class? Should you share your responses to the full class or individually to each student? Do you want students to comment on each other's work?
- Strategy: Where and how can you quote student work effectively and as examples? Can you implement your goals better with in-text comments, an end of text response, or a combination?

In the end, experiment, but purposefully and mindfully. And never forget to ask students what they think and feel, during and after. Those are never the wrong questions.

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Chapter 14

E-feedback focused on students' discussion to guide collaborative writing in online learning environments

Teresa Guasch
Open University of Catalonia, Spain

Anna Espasa
Open University of Catalonia, Spain

Paul A. Kirschner
Open University of the Netherlands, The Netherlands

Why don't I get enough feedback on my essays?

It is quite common for students in all settings to complain about not receiving sufficient feedback on their essays, or only obtaining feedback that is not helpful/adjusted to their expectations. But we have also heard, on multiple occasions, of teachers complaining about students' use of feedback.

We are convinced that the next excerpt is quite familiar to you: "I spend a lot of time detailing in the essay what students need to change, making suggestions and comments to improve their text but it seems that they don't care about what I suggested. Does it really make sense to invest so much time when they really don't implement these comments or changes into their texts? Is my feedback really useful for them?"

However, more often than not, teachers provide general feedback that students have to contrast with their own essays or assignments and in the best situations, they simply get a rubric that can help them implement changes to their work. Consequently, teachers do not see clear improvements in students' essays that might evidence that students are implementing the feedback received, and they also point out that they do not have the resources (time and knowledge) to provide specific feedback that will contribute to students' regulation of learning.

Writing is a difficult task and it is even more complex when students have to write collaboratively, as it demands that they share and discuss the information and the process of writing with peers. For this reason, feedback plays an important role in writing activities to improve students' performance. The demand of writing an essay can take place in a face to face setting, in a computer supported setting (where students can be enrolled in a face-to-face course but communication is through an online platform) or in a fully online setting (where students do not share time and physical location and the communication is mostly asynchronous and written).

The next section will focus on the relevance of feedback in collaborative writing activities taking into account both settings, computer supported and fully online.

E-feedback in collaborative writing

Problems highlighted in the previous section are very common in both computer-supported and fully-online settings. As we have pointed out writing collaboratively specifically in an online learning environment is not an easy task. It requires both high-level cognitive skills and specific communication competences adjusted to this learning environment. One of the educational supports which contributes to the development of these competences is the feedback provided by the teacher and/or peers (i.e. Alvarez, Espasa, & Guasch, 2011; Dysthe et al., 2010; Narciss, 2004).

We understand feedback as a joint activity involving interaction between learners and instructors or among students themselves, focusing on the whole process and including both how feedback is received and how it is utilized (Dysthe et al., 2010). This means that the process of feedback is a loop which includes giving feedback (by teachers and/or peers), receiving it (discussing it with the teacher and/or peers) and implementing it in the assignment. Regarding feedback in an online environment (e-feedback), Dysthe et al. (2010) differentiate between two analytical models: an authoritative model which sees the teacher as an expert who transmits knowledge to students, and a dialogical model where "new understandings are created through joint or participatory activities" (p.244). This chapter is contextualized in the latter. In addition, peer feedback is defined as a method in which students engage in reflective criticism of other students' products and provide them with feedback, using previously defined criteria. Feedback provided to learners –while they are writing an essay- not only contributes to the improvement of the writing products, but also contributes to the learners' regulation of learning. This means that feedback has a formative function that contributes to learning and the regulation thereof (Nicol & Macfarlane-Dick, 2006).

Research on feedback and writing has received much attention. However, there is still a need to bring together a few questions in order to provide instructors and researchers with strategies to give feedback in collaborative writing in online learning environments.

This chapter will provide evidence about the role of feedback in an environment based on asynchronous written communication and will explore different collaborative writing tools which scaffold students' writing through feedback. These tools will be presented in a way that encourages teachers and learners to incorporate the technologies into their teaching-learning practices.

In online university-level learning environments based on asynchronous written communication, writing is essential. In many situations, written communication from and between the students is the only evidence instructors have of student activity and learning.

Specifically, research on collaborative writing shows how collaboration promotes the exchange of thoughts and ideas between learners, can contribute to reflection and critical thinking, and can contribute to improving writing products (Storch, 2005; Yarrow & Topping, 2001). Nevertheless, collaboration does not guarantee sharing understanding and reflection, but "how students represent collaboration and the writing assignment itself determines whether and how they reflect on their own idea" (Higgins, Flower, & Petraglia, 1992).

In this sense, teacher feedback and peer feedback are two different and specific support mechanisms that can contribute to students' learning while they write-to-learn (Bereiter & Scardamalia, 1987). Despite the well-accepted role of feedback in learning processes, some studies show that not all types of feedback are effective, nor do they all contribute to increasing student performance (e.g. Hattie & Timperley, 2007; Narciss, 2004; Shute, 2008).

With regard to the effect of teacher feedback on collaborative writing in online environments, we conducted a study that provided two relevant results which shed light on this topic (Alvarez, Espasa, and Guasch, 2011). First, when feedback was only corrective, students either did not respond to or only confirmed receiving it, whereas when the feedback included suggestions and questions –that is, epistemic+suggestive feedback-, students responded more constructively by discussing the content of their products. Second, there was a significant correlation between student response and text modifications; student actions had an effect on text quality. Specifically, when students used teacher feedback to discuss the content, the text improved significantly.

These results highlight the significance of the type of feedback in engaging students in a discussion about what to do and how to proceed in a learning task and about their own writing process –epistemic feedback-. In this regard, this chapter proposes a teaching strategy based on a selection of tools that drive students to interact among themselves and discuss the feedback received. In other words, it recommends an approach based on the dialogic model presented above.

How do I do it?

Nowadays we have access to a seemingly infinite number of online tools that can help students to write collaboratively and provide and receive feedback in synchronous and asynchronous environments (e.g., Google Drive®, blogs, wikis, Microsoft Word® Track Changes + Comment tools, Adobe Acrobat®, etc.). However, based on evidence from previous studies (i.e. Salomon, Perkins, & Globerson, 1991), we believe that it is not the tool itself selected by you as a teacher that will help the students to write collaboratively and that will make it easier for teachers to provide feedback. This will only be achieved by combining the type of tool chosen with a specific methodology. That is, a methodology based on using the tool in a way that promotes students' interaction and discussion about the content itself and the writing process.

Based on this, we propose a specific teaching strategy that contributes to scaffold students writing collaboration in an online learning environment. The strategy is focused on using a tool in the best possible manner so as to facilitate students' discussion about the feedback provided by the teacher and their peers (see Table 1).

Strategy	Examples of Tools	Type of Feedback
Use of tools that promote student discussion about the feedback received from the teacher and/or peers.	*Hylighter*®. Collaboration software that goes beyond co-authoring and co-editing to support document-centered deliberation and sense making practices, especially for large groups. *NB*. PDF annotation website, developed in the Haystack group, which is part of the Computer Science and Artificial Intelligence Laboratory (CSAIL) at MIT. *Google Drive through an online forum* (in an online platform (i.e. Moodle, Backboard).	Epistemic and suggestive feedback Teacher feedback + peer feedback

Table 1. Strategy, tools and type of feedback to promote student discussion in collaborative writing tasks in an online learning environment.

We have selected three tools to exemplify how the strategy proposed can be achieved. None of the tools have been deliberately designed to help the students write collaboratively in an online environment, but the way we propose to use them will help achieve this aim. It is worth emphasizing the constructivist and collaborative aspects of these tools due to their active and interactive nature. The way these tools are used can create opportunities for dialogic interaction and co-construction of knowledge.

Both Hylighter and NB are social annotation tools that can prompt discussion among students while they comment on a document (i.e., an article, a document with a summary of ideas). Both tools allow students to highlight ideas, comment on and be critical of them, share them and form groups to interact. As pointed out by Lebow and colleagues (2011), "Hylighter solves the problems of how to manage accumulating and overlapping markup and limited space for displaying commentary" (p.263). An interesting characteristic of both tools is that an essay written by a team can be uploaded and the teacher and peers can provide feedback on it. Afterwards, the authors of the essay can discuss the text and the feedback received (see Figure 1).

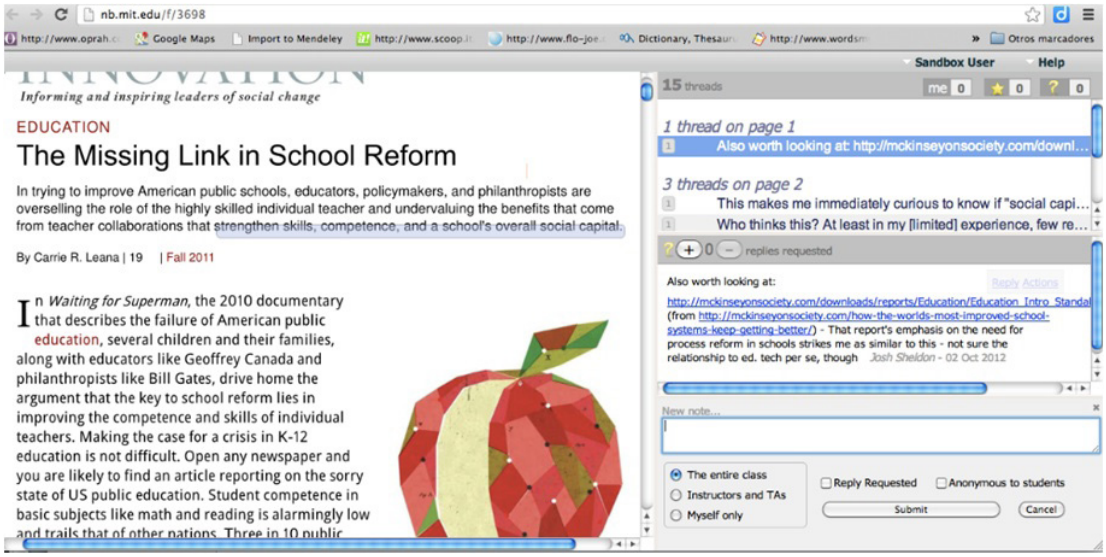

Figure 1. Screenshot of students' interaction in the Hylighter screen.
Extracted from the official webpage of the tool: http://nb.mit.edu/welcome

Both tools are easily accessible and are provided with tutorials and forums to discuss with other instructors its pedagogical use.

The third tool proposed to achieve the strategy presented is combining Google Drive, as a tool that allows students to write collaboratively, with an online forum embedded into a virtual class (of a virtual course using a platform) to discuss the feedback given by and received from peers with each other. This discussion is visible to the teacher so that he/she can scaffold the process of writing. The value of the combination of these tools is the type of teacher feedback and peer feedback that students receive, which will contribute to improve students' performance through online collaboration. How the feedback should be like is an issue that will be detailed in the next section by relating a concrete experience.

A case of epistemic feedback in collaborative writing in a virtual course.

The following experience about the implementation of the methodological strategy takes place every term in a 6 European Credits module in the Psychology Bachelor's degree in the virtual campus of the Open University of Catalonia. This university has been fully online since its foundation (more information about its pedagogic and assessment model can be found on the university's website: http://www.uoc.edu). It can be considered as a representative university where the whole teaching and learning process takes place in an online platform. Communication is asynchronous and written through forums and group spaces.

The educational activity is based on the development of several continuous assessment assignments such as collaborative or individual essays, study cases, problem-based learning or discussions. In the module which is the object of study, collaborative learning case-study techniques are frequently used. Feedback given by teachers or students takes the form of an e-mail that can also include the assignment with the feedback embedded into the text.

In our case, the use of the tool (Google Drive[1] + online discussion forum) takes place during the second assignment of the course, specifically during the evaluation of the results of the assignment, which consists of writing a critical essay on the in-depth study of a case over a period of two weeks.

To carry out the assignment, groups are formed on the basis of a common background. This is an important premise for promoting discussion and facilitating collaborative writing. For this reason, the groups are composed according to the students' own preference for one of the case studies proposed. Their preferences are justified according to the relationship between the students and the topic of the essay in terms of their experience, knowledge, personal, and/or professional interests. The groups have access to their own work space within the debate area in the virtual class to carry out their critical discussions and also to Google Drive, used for the collaborative processing of the essay (see Figure 2).

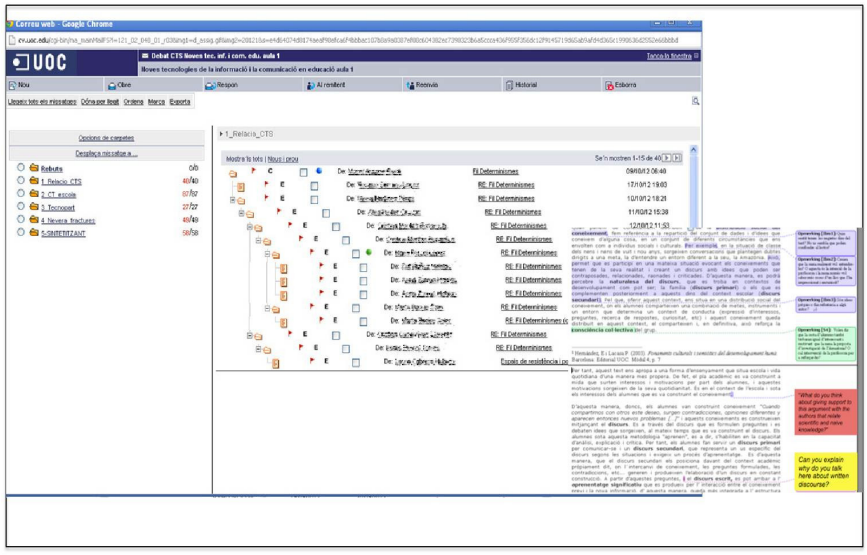

Figure 2. Screenshot of students' interaction, working in teams, regarding the feedback received from the teacher and by their peers on their essay.

1 At the time that the course was given the application was known as Google Docs.

Specifically on formative e-feedback, a study that we carried out in this context revealed that epistemic feedback (i.e., requests for explanations and/or clarifications) or the combination of epistemic and suggestive feedback (i.e., giving advice on how to proceed or progress) are the types of feedback which best promote learning (Guasch, Espasa, Alvarez, & Kirschner, submitted). These results not only highlight the importance of collaboration in writing tasks, but also define what types of support should be incorporated into planning in order to guarantee success in this type of activity in online learning environments.

Based on these results, we asked students to submit a draft of the essay written in teams, and afterwards all groups received epistemic peer feedback and teacher feedback. In this sense, the formative feedback that contributes to improving the quality of collaborative writing and learning consists of a four-step process shown in Figure 3.

Step	Process of formative feedback in collaborative writing activities
I	Submission of the first draft written in teams.
II	Receiving epistemic feedback from the teacher and peers, and giving epistemic feedback to other student-teams.
III	Discussion about the feedback received from the teacher and peers
IV	Implementation of changes into the final version that contribute to improving the quality of the text.

Figure 3. Four-step process of formative e-feedback for collaborative writing in an online learning environment.

In summary, this process, based on teaching and research evidence, should guide teachers' decision to select a tool and to plan their teaching methodology in order to prompt students' discussion in collaborative writing processes in environments based on asynchronous and written communication.

Particulars of implementing the teaching strategy in different settings.

We will describe two aspects in this section to take into account in the process of implementing the strategy proposed: characteristics of the environment and teacher's role.

The strategy and tools described in the chapter can be used for a fully online learning environment or a computer-supported collaborative environment, that is, for a setting where students do not meet face-to-face, and for a setting where students communicate online but share a

face-to-face course. We make this clarification because although both settings share an online platform, the characteristics of communication are different.

Online teaching and learning requires competences closely linked to the particularities of interacting and communicating online (i.e. Berge, 1995; Guasch, Alvarez, & Espasa, 2010). For instance, being competent in writing processes is clearly advantageous with regard to oral communication, especially in terms of planning and reflecting on discourse itself. Online teaching and learning environments, based on written communication, make it possible to overcome the challenges posed by face-to-face settings in the construction of a collaborative text (Kirschner, 2001). This is a factor which can benefit both teachers and students involved in collaborative writing. As they become more familiar with the assignment and the online tools, the students are more able to exploit the characteristics of the technology system supporting the collaborative writing assignment, and to take advantage of it in a creative manner (Posner, Mitchell, & Baecker 1996).

The teacher's role is another factor that must be taken into account when planning a learning task with the aim of improving the quality of collaborative writing in an environment based on asynchronous communication. In such a situation, a teacher must deal with managerial (i.e., coordination of student activities and learning processes), cognitive (i.e., learning), technological (i.e., the electronic environment used) and social competency (i.e., relating to and awareness of each other in the environment) issues. Students amongst whom communication is mainly or only based on an asynchronous and written environment need to exchange e-mails in order to organize the learning task because they do not share a specific space and time (i.e., presenting/asking for a procedure, monitoring the original planning...) whereas their peers working in a face-to-face environment could organize themselves differently. Presumably, the former need to spend more time and make an extra effort in relation to managerial or coordination activities. Several studies show that anchored discussion with adjusted feedback in the same space where students write collaboratively can help them to focus on the task (Alvarez, Espasa, & Guasch, 2011; Van der Pol et al, 2008); therefore, this could allow them to focus the discussion on cognitive activities (i.e., presenting a problem, an idea or a solution, using external information from other sources or linking facts presented in the discussion) which could reduce the time spent on managerial activities. This approach forms the basis of the tools presented.

Your Turn - directions for teachers to try out the strategy– preparation and implementation.
This chapter hopes to untangle some feedback issues that will ultimately improve students' writing performance in collaborative writing in computer supported or online learning envi-

ronments. To achieve this, we have presented a selection of tools together with a methodological proposal based on a teaching experience. In this section we will go beyond the tools to focus on the criteria to choose them and design a suitable methodology to accomplish the aim.

First, we encourage you as teachers ***to design a teaching strategy together with a peer***. Why do you want to work alone if you can learn and plan a better strategy with a colleague? "Practice what you preach" to your students and work in a team in order to share the process of planning the strategy, its development, and its assessment. The first time to settle a new teaching strategy requires time and resources, and it will be beneficial for you to have the chance to discuss how to do it with your peers. The leitmotiv of the chapter is focused on the selection of a teaching-learning strategy that promotes students interaction and discussion about the feedback received, due to its effect on students writing performance. In this sense, we encourage you to follow this statement and discuss with your peers how you will design the strategy adjusted to your setting.

Second, ***choose the tool that best meets your purpose***. You should be able to answer a pool of questions at three levels: planning tool use, developing the instruction using the tool and assessing the implementation of the tool. At a planning or designing level there are questions such as: Does the tool selected let me accomplish the learning aims? Am I familiar enough with the tool (such as, awareness of the difficulties that the students can have)? Do I have all the material/resources ready to make the student-groups, promote student collaboration, etc.?. At a developing level, you will need to answer questions such as: Does my role promote students' interaction while working in teams? Are scripts clear enough? Finally, at the assessing level you will need to answer questions such as: Does the feedback design guarantee that the students know how to improve their texts? Is it helpful? Have the students effectively and efficiently engaged in the collaborative learning activity?

Third, ***familiarize yourself with the tool and the strategy*** especially with respect to anticipating students' difficulties for its implementation. Following the phrase "The medium is the message" coined by Marshall McLuhan, show your students that you do not know everything at a technological level, and how you solve the difficulties, and give them a model of how you work to reach your aim.

Next, ***plan/design the implementation of the strategy***. You as a teacher facilitate the planning, monitoring and organization of the learning process that students are responsible for, as well as provide supporting tools to enable sufficient communication between students and

with students concerning learning goals and assignments. These cannot, and should not, be "planned" in the same way as traditional learning processes are planned. As learning technologies increasingly incorporate highly interactive/collaborative elements, the teacher must have a basic understanding of self-organizing processes (Guasch, Alvarez & Espasa, 2010). Kirschner, Martens, and Strijbos (2004) refer to this as probabilistic design as opposed to causal design. It is also important that as a teacher you do not "over plan" the learning situation. In some cases you should have the confidence to allow "open situations" that are designed by the students themselves, and the patience to let them work on their own, thereby giving the learning process a direction that could not be fully foreseen or planned by the teacher

Finally, ***assess the efficacy of the process*** followed, such as confirming through assessment and explanatory feedback. It should also be a self-assessment of the teaching-learning process that let you know what you would do differently in a next experience. It will be very enriching to discuss it with your peers.
In a nutshell, the selection of the tool to guarantee the implementation is important, but the key is to keep this strategy in mind –focused on formative feedback that promotes students discussion- when planning a collaborative writing activity in an environment based on asynchronous written communication.

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Chapter 15

Writing with Wikipedia: Building ethos through collaborative academic research

Frances Di Lauro
The University of Sydney, Australia

Angela M. Shetler
The University of Sydney, Australia

"You can't expect us to ask students to use Wikipedia," protested one of the tutors. "I've worked so hard to iron out bad habits that asking them to use Wikipedia will just undo all of my good work," added another. Why were they so upset? Even though I had academic publications, I was thrilled to have edited a Wikipedia page, so imagine how rewarding it could be for students — not only was it possible to achieve an almost instantaneous result, but it was easy to learn to edit and add facts to Wikipedia. Teaching students about the importance of using authoritative sources, citing them correctly, and acknowledging their use in order to preserve their academic integrity is a tricky affair. As crucial as the subject is to the development of their ethos, students are saturated with warnings about avoiding plagiarism from all their lecturers, course readers, and assignment coversheets to the point that they stop listening altogether. Part of the satisfaction I experienced in editing Wikipedia came from contributing to the larger community by adding facts and references to pages lacking sufficient information and supporting evidence. Using Wikipedia in the classroom is a way for students to experience this same satisfaction, as they are able to view their work as relevant while also being scrupulous about the information they add — both to avoid plagiarism and to ensure that Wikipedia editors will allow the changes to remain on the page. I was immediately inspired to develop a formative activity for my students to use in our upcoming class on fact checking. Following links from Wikipedia's "About" page, I found a "Wikiproject" with a link to entries needing factual verification that included over 17,000 pages! Even the most recent month and year yielded many topics to choose from. Despite initial concerns from tutors, the level of students' engagement in the activity was so positive that my co-author, Angela, and I subsequently used an improved adaptation in our classes. In this chapter, we will explore the use of digital media and technology in the writing classroom to engage and empower students, focusing primarily on the use of Wikipedia in university classes as a platform for teaching students about ethical writing and

academic integrity; academic research skills; and as a tool for research-enriched learning and teaching (RELT) by engaging them in the peer-reviewed publication of scholarly academic knowledge.

Overview

The Writing Hub at The University of Sydney is the first of its kind in Australia, a hybrid writing program and writing center built on the principles of classical and new rhetoric to teach clear and effective communication at the tertiary level. Our approach and philosophy are guided by the evolving language and communication needs of increasingly connected and media-savvy students. Students develop their abilities in argumentation, composition, cross-cultural communication, and critical thinking in order to achieve success in university and in the workplace.

To support student writing, the Writing Hub has designed blended courses with online assessment, online textbooks, and online activities. Writing tutorials (workshops) are held in a networked classroom to facilitate easy access to digital media and technology, and it is with this environment in mind that we have developed activities that relate academic writing to digital culture. Rather than assume that students are digital natives, the Writing Hub teaches students how to use a variety of technologies to craft communication across mediums and platforms.

In recent years, we have followed the approaches modeled by our predecessors to maintain student interest in using and acknowledging academic sources. This was primarily achieved by showcasing examples of ethical breaches in authorship and the consequences of those breaches. These examples were drawn from a pool of colorful and often charismatic authors who were discovered falsifying their authority, ethnic, social or political backgrounds, those who plagiarized by reproducing the material of others without acknowledging it, or others such as Jonah Lehrer who recycled his own work and in one instance, like Stephen Glass, fabricated evidence. Examples from the art and music worlds were used to demonstrate acceptable forms of borrowing such as intertextuality and allusion.

This worked very well to capture and maintain student interest in the lecture situation when teaching the importance of preserving academic integrity in formal writing. In tutorials, we would ask students to fact-search some of the claims in these authors' publications. These activities were designed not only to help students understand the importance of supporting claims with evidence, but also to instill in them a healthy dose of skepticism that would dis-

courage them from unquestioningly accepting the arguments of others, even those thought to be authoritative. These types of exercises also help to refine students' critical thinking skills and develop their ability to harvest information with greater precision. In the tutorial situation as well, therefore, we were able to keep students interested during these activities, but the exercises did not address or help students to develop sound referencing practices. We still received submissions from students in which notable portions of text were quoted without being distinguished as coming from the published work of others, and students were still failing to acknowledge sources. Paradoxically, students breached academic honesty requirements most often when answering an out-of-class essay question on the topic of plagiarism, and this occurred over three consecutive outings of one particular course. In those examples, the students copied large tracts of text verbatim from pedagogical articles about plagiarism, without acknowledging the sources. Wikipedia has presented us with ways to engage students in activities that require them to exercise rigorous research methods and to strictly observe the principles of academic honesty, while gaining a sense of tangible achievement and community collaboration. Before turning to the implementation of these activities, we will discuss some of the issues of using Wikipedia that need to be considered in educational settings.

Negative Attitudes Towards Wikipedia

The participatory culture of Wikipedia allows for writers of all levels of knowledge to contribute and edit knowledge, while in theory, respecting its core aim of neutrality (Lessig, 2006, p. 243). Even though edits are screened for bias, the ease of editing, anonymity, and collaborative nature of the project does, nonetheless, lead to issues of accuracy and authorship (Quiggin, 2006). Negative perceptions regarding the wiki's reliability as a tool are slowly changing thanks largely in part to a side-by-side comparison of Wikipedia and *Encyclopedia Britannica* articles conducted by *Nature* that found accuracy of the wiki content on par with the print counterpart (Giles, 2005). Wikipedia has also improved its editing processes and accuracy measures in the 12 years since its launch by having regularly contributing Wiki members review writing by new contributors (Gonsalves, 2009).

Negativity in academia towards Wikipedia is also due in part to the question of authorship. Unlike traditional encyclopedias, Wikipedia articles do not require expert contributions or list author names, making it an unreliable source for researchers in the traditional sense of citing references. However, the breadth of Wikipedia's user-generated content makes the wiki a worthwhile place to begin the research process, particularly when activities are incorporated into the curriculum that teach students both the benefits and the limits of Wikipedia in developing their ethos as writers and researchers.

Using Wikipedia as a tool to teach both fact checking and referencing is helping to embed the teaching of sound referencing practices in our courses. This approach was met with some resistance from teachers in our courses. Although many academics themselves turn to Wikipedia to expedite their research, some — particularly in the humanities — have yet to warm to this shift to technology-enhanced learning and teaching (TELT) and still warn students against using Wikipedia. It was only a few years ago that we used an example that involved an Australian Government Tribunal decision that was informed by Wikipedia to demonstrate serious consequences of inadequate research practices. That case involved the Refugee Review Tribunal's refusal to grant a protection visa to an Iranian national, a decision for which the Federal Magistrates' Court chastised them. The visa applicant had argued that if he returned to Iran, he would be killed for supporting, and converting to, Christianity. His application was rejected because he was unable to describe ritual aspects of one denomination of the Armenian Church which was described in a Wikipedia entry, when he had in fact attended another (Gosch & Buckley-Carr, 2007). In all fairness to Wikipedia, however, the tribunal was found to have relied on irrelevant information. The claims in Wikipedia's article were correct and were supported with a reference. The lapse was on the part of the tribunal representatives, who had made no attempt to distinguish between the denominations, failing to attend to detail. This was an illustration of inadequate research practices and poor critical thinking abilities, rather than a smear on the trustworthiness of Wikipedia content.

Yet Wikipedia is often charged with suppressing critical thinking, and, according to Brabazon, like Google, it "offers easy answers to difficult questions" (Baker, 2008). Brabazon claims that students "do not know how to tell if they come from serious refereed work or are merely composed of shallow ideas, superficial surfing and fleeting commitments" (Baker, 2008). Given such negative attitudes, it is not surprising that opposition to Wikipedia and open source publishing persists. When we introduced the first stage of our program using Wikipedia, which gives students practice at fact checking and referencing, some of our tutors (teaching assistants) responded negatively, and two refused to participate altogether. Several tutors rejected the exercise because they felt they were too unfamiliar with the processes involved with Wikipedia editing and were not able to invest the time in learning them to prepare for the exercise. Of the two whose attitudes reflected a negative view of Wikipedia, one feared that introducing such an activity would cause confusion for many students who would not know when it is appropriate to use Wikipedia and when it is not. Another tutor said she had been relentlessly warning students against using Wikipedia and had threatened to penalize them if they did. This tutor was concerned that a retraction might make her appear weak and inconsistent.

These reactions from otherwise technologically able tutors completely surprised us. Unlike those referred to in the article above, our students learn the strategies needed to determine if sources are academic and peer-reviewed prior to conducting their research. Therefore, the majority should be able to determine when a source is considered authoritative for academic purposes. Furthermore, the activity we were proposing did not require students to cite Wikipedia or the sources found in references on Wikipedia pages. Instead, for this activity, our students were required to seek verification for claims in Wikipedia pages that had no references to support them, to add citations, and to supplement information on the pages if appropriate. They were instructed to conduct their research for the fact-checking exercise outside of the Wikipedia platform, through academic search engines.

We agree with educators who are skeptical of information found on Wikipedia pages, within reason. The reliability of information on Wikipedia, and the references offered up in support, should always be questioned as even pages that are excellent resources on a topic can contain errors. Historian Neil Waters, for example, found that multiple students in one of his classes cited a Wikipedia entry on the Confucian, Ogyu Sorai, and others on the Shimabara Rebellion of 1637–1638, both of which included incorrect information on significant details. This caused him to implement a policy in his department that states that the responsibility for information they provide rests with students, and which prohibits students from citing Wikipedia as a source (Waters, 2007, p. 15). These sensible policies go a long way towards restoring more intensive approaches to research. It makes perfect sense that students take responsibility for checking the information they wish to use that derives from Wikipedia. Students should also be discouraged or prohibited from citing Wikipedia, or any other general encyclopedia in assignments for tertiary studies. While specialist encyclopedias, such as Medpedia, are written, updated and maintained by experts, information from generalist encyclopedias can lack depth and complexity. Like these, Wikipedia should be used only as a research path or tool, not as an authoritative source that can be cited with confidence.

On the other hand, to discourage — or worse to prohibit — the use of Wikipedia altogether is a dubious solution, one which discounts the organic nature of information literacy in our digital era. Parry labels it "irresponsible for educational institutions not to teach new knowledge technologies such as Wikipedia" (2008) as new modes of knowledge creation, storage and archiving are fundamental to the future success of today's students. Research has shown that while there is little difference between the reliability of static traditional encyclopedias such as Britannica and Wikipedia, the latter can at least be updated and errors corrected more easily and quickly than the physical counterpart (Rahman, 2008) due to its collaborative and

real-time nature. Although there is still a place for traditional research methods in scholarship, universities must allow students to develop research and reporting skills that can be adapted to emerging digital literacies. Tertiary educators need to teach students how to manage and use information from dynamic content creation sources without undermining their ethos.

Taking a further step, educators can teach students to privilege information they find in academic books and peer-reviewed academic journals. Peer-review is, after all, the litmus test for determining the quality of scholarly publications and students can learn to cite not the Wikipedia pages themselves, but the peer-reviewed articles that support information on those pages. Most writing textbooks include chapters that instruct students on how and where to find credible sources from the Internet, text books, journals, magazines, and so forth; in what circumstances researchers should seek out only authoritative sources; and when they should use sources with expertise in particular, obscure areas of scholarship. This sort of instruction, the insistence on the use of scholarly sources, accurate citations, and a reference list, can help to reduce the problems that can arise when students do not know how to distinguish between credible and non-credible sources. It will hone students' ability to recognize scholarly sources, regardless of the forum in which they search. Equipped with the necessary knowledge and skills to evaluate sources, students can continue to seek clarification or direction on a topic by searching Wikipedia pages, while realizing that they must check the authenticity of the information they are intending to use by tracing it back to its source.

Wikipedia as a Legitimate Resource Outside the Classroom

One way that educators might begin a conversation about the reliability of Wikipedia as a resource in academia is to explore how it is increasingly being used and relied upon as an information source in centers of knowledge production outside of academia: in business, professional, and judicial contexts both in the United States and, for our context and purposes, in Australia. The earliest citations to Wikipedia in court settings date back to 2004, and by 2010 Wikipedia had been cited in more than 400 cases in U.S. courts (Peoples, 2009-2010). According to Miller and Murray (2010), courts around the U.S. are increasingly relying on Wikipedia to support facts, claims, definitions, geographical information (pp. 633-634) and, quite often, to evaluate the logic or reasoning of a party's argument, or to support the reasoning of the court itself (Peoples, 2009-2010, pp. 4-5).

Opinions vary on the appropriateness of using Wikipedia to support claims in court. Some, like Posner, believe that it is a "terrific resource" but that it "wouldn't be right to use it in a critical issue" (Miller & Murray, 2010, p. 641). Others argue that:

> *Wikipedia is an amazing resource, worthy of citation by a critical user—just like many traditional published sources. In some cases it may be more trustworthy than traditional sources—typically issues where there is likely to be a wealth of knowledge and passion among netizens—, while in others less. (Chander, 2007)*

Courts might, for example, use Wikipedia to untangle the common meaning of colloquialisms, acronyms, or trade or industry specific terms that cannot be found in traditional dictionaries. Westlaw International's ALLCASES database shows, for example, that definitions from Wikipedia featured in court cases heard in the U.S. in 2012 included "sugar daddy", "sous chef", and a generic interpretation of "jet-ski". In other cases, Wikipedia was found to have more comprehensive and accurate definitions of terms such "psychopathy", and diagnostic instruments like the Gudjonsson examination than entries in non-specialist print dictionaries. In other cases, Wikipedia might provide contextual information. When a primary or traditional source exists, Wikipedia can be cited as a secondary source (Miller & Murray, 2010, pp. 646-648), but this is less useful in cases where primary or traditional sources are simply out of date.

One of the most common uses of Wikipedia in judicial settings is due primarily to this problem. Contemporary uses of terms such as "avatar" for instance cannot be understood with reference to a traditional print dictionary that predates the use by years. Justice Alex Kozinski demonstrated in a case that depended on the interpretation of a word that the entry in a major print dictionary had not changed between 1963 and 2002 (Peoples, 2009-2010, p. 15). In such cases, the collaborative nature of knowledge production on Wikipedia is its very strength, representing majority consensus on recent, contemporary interpretations and perceptions, where the traditional scholarly authority is representative of a discrete minority opinion or understanding.

Another strength of collaborative knowledge production is its timeliness. Despite exponential increases in the speed of communication transmission in the Internet age, the turnaround time for peer-reviewed publications has become longer, not shorter. Ellison observes that, where in 1970 economics journals accepted articles for publication within six to nine months of submission, the waiting time in 2000 was around two years (Ellison, 2002, p. 110). Similarly, the wait in-between submission and acceptance time in the American Journal of Physical Anthropology increased "from 6.9 months in 1980 to 15.7 months in 1996" (Black, 2008, p. 76). These are just some of the ways in which Wikipedia is being used in a variety of contexts, and discussion around these uses further adds to the legitimacy of using the tool in the classroom to explore ethos through applied research.

Collaborative Writing With Wikipedia: How Do I Do It?

The wiki model serves as a collaborative space to allow for the benefits of collective intelligence with free access based on open-source collaboration. Wikipedia is the most well known, and as a collaborative space it gives volunteers the opportunity to contribute to an online database of information where the reward is in the participatory act itself. Given these reasons, we chose to trial collaborative writing with Wikipedia in our classrooms and use the negative attitudes of its use in academia to start a conversation about why such attitudes persist and how the tool can be used in a way that is pedagogically sound.

In 2012, we piloted an activity with a group of 240 undergraduate students to develop their understanding of the fluid nature of dynamic content creation. The activity familiarized students with the safeguards put in place by Wikipedia to ensure the authenticity of information included in their Wiki pages, as well as how they indicate to users that information has failed or eluded their verification processes. In subsequent steps of this activity, students worked in groups to locate, authenticate, and publish information on Wikipedia pages. Students were informed about the activity in a lecture that preceded tutorials, where they were also introduced to the concept of fact checking in journalism and politics. This was followed up with two readings about fact checking in these domains. Two academics tested the activity before it was passed on to tutors with instructions on how to conduct the activity as follows:

1. Students should work in groups of 4 and at least one member of the group should sign up to become members of Wikipedia.
2. Students should go to the 'Wikipedia articles needing factual verification' page (see Appendix A), choose a recent year and month, and find a topic that interests everyone in their group.
3. After they select a topic, a link takes them to the page and they find that the information that needs to be verified is identified and labeled. In some instances, the facts need verification from a reliable source. In other cases, spellings, names, or other details need to be corrected or updated.
4. Students were instructed to take a screen shot of the page showing the unverified facts before commencing their research.
5. Students were then asked to conduct their research on the University of Sydney's library cross-search engine and on Google Scholar.
6. After all students finished their research, the student with a login made the edits/added the reference and saved the changes. At this point, the editing page allows users to preview the edits, which students were instructed to take a screenshot of.

Once they finished making edits to a page, students followed steps 2-4 to verify facts on other pages.

Students' perceptions of this activity were generally positive, although the extent to which they felt a sense of satisfaction after completing the task depended on the extent to which they were able to find information they were searching for, locate evidential support, or insert references for information. Students from groups that chose obscure topics or facts to search and were unable to find information in the allotted hour told their tutor in later class discussions that they were disappointed. On the other hand, members of groups that were able to make even one edit were visibly happy and said they were proud of their achievement — those that were able to make multiple changes, triumphant.

After reflecting on the activity, in light of these mixed results and considering other potential uses of Wikipedia fact verification programs, we have come up with a number of variations to the procedure to enhance or increase students' sense of achievement. Using these added protocols, the activity was repeated in the next outing of the course, with great success. Firstly, we tabled the activity earlier in the semester, and after students had completed some guided research activities, learned about and conducted evaluations of their sources, and received instruction on referencing. We then included a compulsory online self-paced module on Wikipedia use in which students learned about editing, created user accounts, and worked in a playground known as a "sandbox" (see Appendix B). Each Wikipedia user has a sandbox area in which they can experiment with writing or editing text, formatting or just collect information in draft form. Students worked in pairs on preselected topics in the tutorial that followed and essentially performed the activity following the regime used in the previous year. We found that this new procedure was far more successful and that all groups achieved at least one edit during the tutorial time. We recommend this amended version of the activity to teachers wishing to experiment with Wikipedia in writing classrooms.

Extensions for Writing Instruction

There are a variety of ways in which Wikipedia can be used — and is being used — for writing and writing instruction. The activity that we piloted is just one example of how the collaborative nature of Wikipedia can be used in the classroom to develop students' ethos as writers. By incorporating an already familiar technology and resource into writing instruction, it is possible to engage students in a meaningful way that relates to how they write, research, and access information in both academic and real-world contexts. This also helps relieve the anxiety and negativity surrounding Wikipedia by demonstrating how it can be used in a pedagogically

sound manner. To extend upon the fact-checking activity that we trialed with a cohort ranging from first- to third-year university students (domestic and international), we'd like to include some additional ideas that we hope to put into practice in the future, and that may be useful for inspiring writing with Wikipedia activities in your own classroom.

The first activity deviates from our trial in that it does not require students to add content to Wikipedia; rather, students conduct rhetorical analyses of existing articles to determine (1) how well the writing and research works together in its arrangement; (2) whether or not the article is written in clear, non-biased language; and (3) if there are any identifiable biases of Wiki contributors or cited sources in terms of special interest groups, agendas, etc. This is an activity that is particularly well suited to Wikipedia given its mission to provide neutral information.

The second activity would be suitable for having students practice revision and editing. To do this, students could either work alone, in pairs, or in groups to translate — so to speak — an article from the English Wikipedia site to an article suitable for the Simple English Wikipedia site. By doing this, students are applying what they have learned about audience, purpose, clarity, and language and again have the potential to publish new content in the online space.

The third activity focuses on teaching students about visual rhetoric and intellectual property, and rather than Wikipedia, it incorporates Wikimedia Commons. Like Wikipedia, Wikimedia Commons is editable by anyone. However, it is a repository of images and media only, not text. The media files in Wikimedia Commons can be copied, used, and modified freely in accordance with the terms of the license set by each author. This makes the site a valuable resource for media that can be used in classroom projects or assignments, as well as a potential destination for the photographs, images, diagrams, and recordings that students might be creating in and for class.

Your Turn

In preparation of the activity, we recommend teachers devise a teaching schedule that prioritizes the teaching of research and referencing. In our classes, these two modules followed a module on Invention, or discovery, and the way we taught research and referencing prepared the students for the Wikipedia fact-checking activity:

Research and Referencing.

1. In our research classes, students practiced researching through the University of Sydney Library's cross-search engine and scholarly databases for sources on a chosen topic. During these learning situations, students learn to distinguish between reliable and unreliable sources. One of our preferred resources is found in Lunsford and Ruszkiewicz's *Everything's an Argument* (2010, pp. 549-555).
2. Students are then required to evaluate the authority and expertise of the sources they have found themselves, one source that is found for them by a peer that they are working with, and one source that they extract from one of the sources they found on their own (the "embedded source").
3. After completing a referencing module online, students compile an annotated bibliography of their sources.
4. Instructors should complete the Wikipedia training module (see Appendix C), create a login, and practice each of the activities before teaching students.
5. Students complete the same online self-paced module on Wikipedia where they too learn about editing Wikipedia pages, creating a user account on Wikipedia, and creating their own Sandbox to begin editing.
6. To save time in class, teachers may wish to pre-select and assign topics that students can work on in pairs.

Implementation.

1. Students should work in pairs and decide whose login they will use.
2. Students should go to the 'Category: Wikipedia articles needing factual verification' (see Appendix A) and each pair should choose one of the prescribed topics.
3. After they select a topic from the list, students should find what needs to be verified, updated, or referenced and begin their research. Thirty minutes should be sufficient time for research. To identify areas for improvement, look for red text, or Wikipedia notifications on information needing referencing or verification (see Figure 1).

Figure 1. Sample Wikipedia notification. Screenshot captured from "Ownership". Wikipedia. 2012. http://en.wikipedia.org/wiki/Ownership

4. After all students have finished their research, they should make the required edits, preview the changes, and save them. Teachers may wish to ask students to take a screen shot before and after making edits in order to save a record of their activity (see Figure 2).

Figure 2. Before and after of students' citation edit. Screenshots captured from "Tropic level". Wikipedia. 2012. http://en.wikipedia.org/wiki/Trophic_level

This teaching technique opens up a dialogue about how academic research should be conducted, as well as how the credibility of a source can either lend or detract from the credibility of a writer. Not only does this engage the students in a discussion that is relevant to their academic and personal lives, but it also gives students authority as they discover how their knowledge and their ability to find knowledge contributes to a global community. This sense of authority is key to encouraging critical thinking and making the classroom student-centered rather than perpetuating the limited view of knowledge as a one-way street from the expert (teacher) to the novices (students). This construct of authority and knowledge frames academia as the "gatekeeper to knowledge" (Eijkman, 2010, p. 181). Encouraging students to question information, research collaboratively, and produce writing that is accessible to a global audience furthers the goal of instilling attributes that prepare students for life after graduation. Using Wikipedia for activities such as the one piloted at the University of Sydney gives students the real-world experience of contributing to a collective source of knowledge — an experience that greatly enriches their understanding of ethos, scholarship, and collaborative engagement, as well as the quality of Wikipedia itself.

Conclusion

Wikipedia is only one example of an existing resource that can be used to increase engagement in the classroom through collaborative writing in a global, networked community. Rather than assuming the knowledge of students — whether in regards to how digitally savvy they are or if they know how to research and write an essay — teachers can use technology and digital media to start conversations about writing in academia. Teaching research skills in first-year writing courses is particularly important, as it encourages students to engage in scholarly activities such as peer review, collaboration, and critical thinking and develop their ethos as academic writers. While there may be institutional resistance to incorporating technology into the curriculum, particularly if the technology in question already has negative perceptions in academia, it is worthwhile to explore and experiment with how such technologies and digital media can increase student engagement and learning — especially when such tools and platforms are already being used by students to write outside the classroom.

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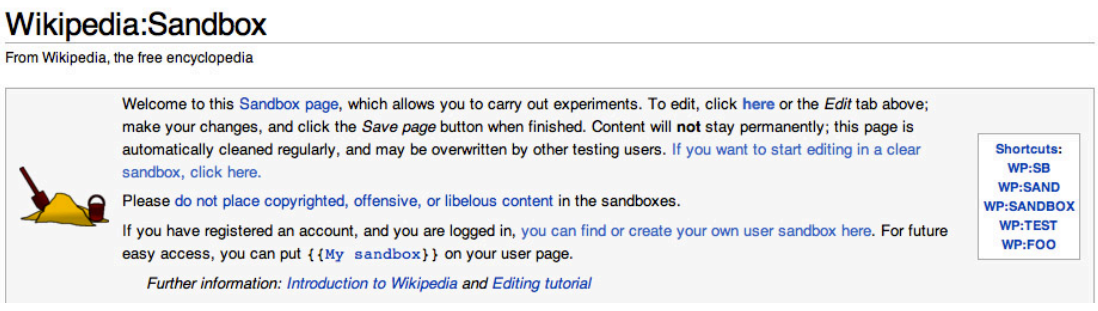
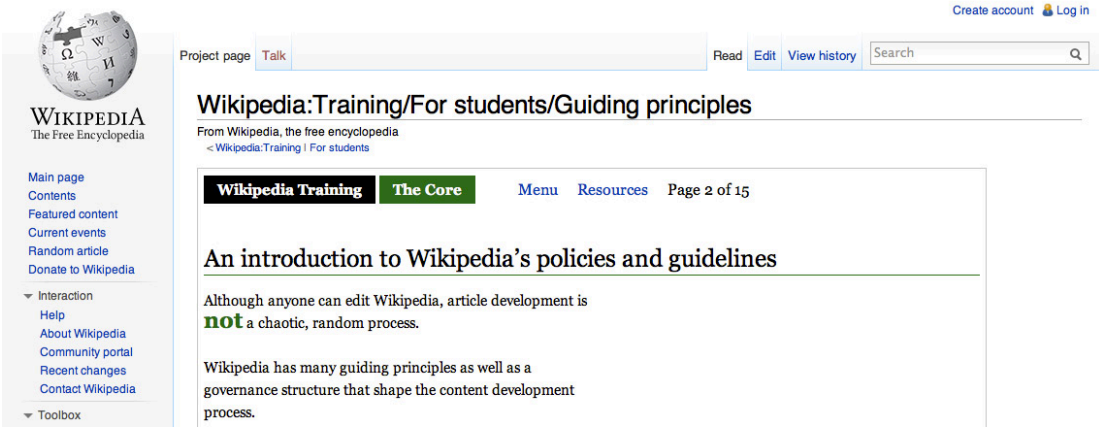
Appendices

Appendix A: Wikipedia articles needing factual verification: http://en.wikipedia.org/wiki/Category:Wikipedia_articles_needing_factual_verification



Appendix B: Wikipedia Sandbox: http://en.wikipedia.org/wiki/Wikipedia:Sandbox



Appendix C: Wikipedia Training Module: http://en.wikipedia.org/wiki/Wikipedia:Training/For_students/Guiding_principles

Conclusion

Chapter 16

Assessing the impact of technology on preparing teachers to write using technology

Kristine E. Pytash
School of Teaching, Learning and Curriculum Studies, Kent State University

Richard E. Ferdig
Research Center for Educational Technology, Kent State University

Timothy V. Rasinski
School of Teaching, Learning and Curriculum Studies, Kent State University

Introduction

Courtney is a teacher educator preparing in-service (professional development) and preservice (college instruction) teachers to become writing instructors. There are times when Courtney uses technology in her pedagogical practices. For instance, she uses online videos to provide evidence of exemplary, reform-oriented practice in the teaching of writing. There are other times when Courtney uses the technology as the object of instruction. She teaches her students about blogs, wikis, and Google Documents as technologies that they can use in their future classrooms. Finally, there are times where the two merge and Courtney teaches about writing and the impact of technology while using technology. For example, she uses an online writing community to have her preservice or in-service teachers do peer reviews in the classroom. Technology becomes the medium by which she is able to teach about peer review. It is also represented as the tool future teachers can use in conducting peer review.

Given this brief example, it is easy to see how technology is changing how we write, what constitutes writing, how we teach writing, and how we prepare others to teach writing. The chapters presented in this book provide insight into how teacher educators are working in preservice and in-service teacher education as well as in professional development contexts to teach teachers about writing instruction utilizing technology. These chapters provide insight into (a) particular pedagogical practices, (b) the research base for the instructional practice, (c) specific examples of the approach used, and (d) ideas for implementation for other teacher educators.

This concluding chapter explores the implications from these chapters -- to help teacher educators make sense of some of the broader issues within the teaching of writing with technology. Most of the implications presented in this conclusion can be found in all of the chapters, although we do highlight examples from specific chapters to demonstrate these points.

Findings

1. Writing educators embraced technology in their own classrooms.

Many of the chapters featured in this book focused how on teacher educators embraced technology in their methods courses. Teacher educators often discuss methods courses as a context that allows preservice and in-service teachers opportunities to view themselves as writers (Kaufman, 2009). These chapters extend that notion by sharing how method courses can allow preservice and in-service teachers to view themselves as not just writers, but also as digital writers and multimodal composers. The teacher educators featured in this book created assignments allowing preservice and in-service teachers to use technology and digital media for writing assignments. For example, Wickstrom's chapter explored inquiry through a multigenre paper. Beach and O'Brien's chapter share that: "preservice and in-service teachers are more likely to employ technology tools in the own classrooms when they have ample opportunities to use these tools in methods courses. In doing so they become familiar with and develop comfort in using tools for their own purposes, leading them to perceive the value of the tools for use in their own teaching" (p. 79).

The goals of the teacher educators featured in this book also included giving preservice and in-service teachers experiences that they could take to their future classrooms. While they wanted preservice and in-service teachers to use technology for their own writing, they were also working to provide opportunities for preservice and in-service teachers to consider how they would be writing teachers who used technology. Teacher educators did this through assignments and reflections that allowed them to articulate how they would design and implement lessons. For example, Martin and Dismuke highlight how their students created an interview feature article to explore not only the writing process but how they would provide instruction for "written products in digital environments" (p. 98). Similarly, Werner-Burke & Vanderpool's chapter highlights how writing instruction in methods courses moves teachers past using technology solely for their own learning, to understanding how it is integrated into their pedagogical practices.

While assignments are one avenue for this type of work, Rhodes' chapter highlights how a clinical experience attached to a methods course provided preservice teachers opportunities to use

iPads in their work with student writers. This chapter highlights that clinical experiences and practicums attached to methods courses can teach the pedagogical decision-making behind using technology during the teaching of writing.

Teacher educators realize this is complicated work requiring preservice and in-service teachers to have in-depth pedagogical understandings. Preservice and in-service teachers need to know how this work can be taken up and interpreted in various contexts and require a language to discuss these pedagogical practices. For example, Rish's chapter explores how engaging teachers in this work requires opportunities in methods courses for developing a meta-language "for discussing multimodality about their own multimodal composing to inform how they will support their future students" (p. 5).

All of the chapters emphasize the need for teacher education to be committed to providing preservice and in-service teachers these types of opportunities in methods courses. The methods course setting can provide preservice and in-service teachers both experiences as students and pedagogical knowledge needed to teach writing integrated with technology.

2. Future and practicing teachers need sustained professional development related to technology and writing.

Teacher educators often facilitate professional development for teachers in the K-12 setting. The chapters in this book stress that in order to effectively integrate technology into writing instruction, teacher educators must make sure that the teachers in the K-12 setting have consistent and immediate access to technology as well as training, mentoring, and technical support. Teacher educators need to provide a clear vision of what writing instruction using technology looks like. While teacher educators are noticing teachers use technology, like ipads, iphones, blogs, and websites in their personal lives, they also note this doesn't automatically mean they can teach writing with technology. McIntyre points to the need for teachers to have visions for "how to integrate digital tools in their instruction in ways that will enable them to accomplish curricular objectives and to situate students' writings as both literacy and social practices.... Professional development should not only introduce teachers to ways of integrating Web 2.0 tools, but also provide on-going support in the classroom so that teachers feel comfortable and confident in providing students those opportunities" (p. 141).

This ongoing support can occur in many ways. For instance, teacher educators can serve as mentors to model and provide guidance before asking teachers to independently teach writing with technological tools. Collet highlighted how the teachers benefited from supportive profes-

sional development. She explains the process beginning with reflection and moving "through a sequence of short, practical sessions that provide not only information but also hands-on opportunities to put new ideas into practice" (p. 112).

Teacher educators who provide professional development need to recognize the many needs of teachers at the K-12 setting. It seems as if access to technology is the most recognizable need; however, teacher educators are realizing that teachers need continuous support if they are to effectively integrate technology into their writing instruction. This requires teacher educators to model instructional approaches and provide opportunities for collaboration amongst K-12 teachers.

3. Technology can support collaboration in writing and in teaching writing.

Many of the chapters in this book highlight how technology can be used as opportunities for collaborative learning. As Di Lauro, Shetler, and Kirschner describe, collaboration can meet instructional goals as it provides opportunities to consider and examine "ethical writing and academic integrity" in digital writing environments (p. 209).

And as many of the authors noted, collaboration provides teachers with the support they need to grow as teachers of writing and technology. Teachers are often feel isolated in their classrooms; yet, these chapters demonstrate that collaborative groups can be used to help teachers learn how to use technology. Akhavan's chapter highlights how when teachers collaborate "they have greater support systems for themselves and for their students" (p. 133).

The teacher educators in this book specifically explored how technology created opportunities for collaboration that otherwise might not exist. Hicks, Busch-Grabmeyer, Hyler, and Smoker's chapter shared the experiences of their professional writing group. Using Google Docs and Google Hangout the writing group shares their writing and provides each other feedback. This collaboration influences their personal writing; however, it also allows them to work together to integrate new ways of teaching writing with technology into their classroom practices. They share that "using social media and digital writing tools effectively can lead to many changes in our own, and our students', writing practices... The main goal for us each is to grow professionally and personally as a writer. Furthermore, our group can challenge or push each other in developing more effective instructional practices with engaging online conversations about the writing going on in everyone's classroom" (p. 155).

These chapters remind teacher educators that they cannot dismiss the importance of collaborative writing opportunities and collaboration for instructional growth. Technology can be the

avenue that fosters these continued conversations and relationships.

4. The ubiquity of technology means broadening notions of writing.

While all of the chapters offer discussions over a wide range of technologies, specific chapters explore how technology has changed what the field defines as writing. Print-based text is no longer the sole means for communication. Teacher educators are leading the field by broadening the conceptions of writing and genre. Gerber and Price provide information about how they engage preservice and in-service teachers in opportunities to investigate gamed-based writing activities and paratexts. Also, expanding the field's notions of texts is the chapter by Valerie and Abed focused on National Writing Project teachers' experiences composing with comics while learning to teach digital graphic writing. These chapters highlight the important role that teacher educators have in advancing the field to explore how technology has broadened notions of writing beyond traditional print-based writing.

5. Technology can be used to provide feedback for learning writing.

Feedback plays an important role in the writing process as it is used to improve students' performance. Technology can facilitate and foster feedback so that it becomes immediate and meaningful. Chapters in this book explore the clear benefits of the pedagogical possibilities of collecting, reading, and responding to student writing electronically. As Kavaldo highlights, "the instructor has a much clearer insight into the writer's thought process and problems, but also into potential ways to explain revision possibilities" (p. 185).

Teacher educators are exploring how technology can be used as a tool to provide feedback to collaborative learning situations. Guash, Espasa, and Krischner note that technological tools have not "been deliberately designed to help the students write collaboratively in an online environment, but the way we propose to use them will help achieve this aim. It is worth emphasizing the constructivist and collaborative aspects of these tools due to their active and interactive nature. The way these tools are used can create opportunities for dialogic interaction and co-construction of knowledge" (p. 199). Therefore, teacher educators need to prepare teachers for considering the effectiveness of various tools and exploring the ways technology can help them meet their pedagogical goals.

Implications

Chapters submitted for to this book responded to an open call. There were no pre-defined themes to organize this book, outside of the general notion of teacher educators using technology to teach writing. However, the chapters that were submitted and accepted for publication seemed to address four specific contexts or audiences: methods courses (preservice and in-ser-

vice), teachers in K-12 settings, beyond professional development, and composition coursework. The findings and implications from each chapter may cut across multiple contexts, but the authors were writing to those working with those specific audiences. In addition to summarizing some of the key findings presented by the authors, we return to those categories to explore some broader implications of this work.

Methods Courses (preservice or inservice)

Teacher educators note that writing methods courses are often either not offered or not a priority for teacher preparation programs (Hillocks, 2006; Tremmel, 2001; Smagorinsky, 2010). And yet, there has been a call to increase students' engagement in writing at the K-12 level (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). Teacher educators must be vocal and advocate for methods courses devoted to the teaching of writing. Furthermore, if teacher educators expect preservice and in-service teachers to teach digital writing and multimodal composition, then methods courses must embrace pedagogical practices that integrate technology in the teaching of writing.

As evidenced by the chapters in this book, preservice teachers and in-service teachers need to be digital writers and multimodal composers themselves, starting in their methods courses. Teacher educators cannot expect them to teach this way if they have not had experiences writing this way. Experiences as digital writers and multimodal composers can occur through coursework, specific assignments, and opportunities for reflection.

Teacher educators' larger purpose of engaging preservice and in-service teachers in the latest technologies to explore writing instruction must be to influence and shape pedagogical practices. However, teacher educators can't necessarily expect personal experiences to translate into understandings of how to design and implement instruction that integrates technology and writing. Preservice teachers need clinical experiences and fieldwork that allows them to practice creating and facilitating this type of instruction. in-service teachers need opportunities for reflection on their current writing instruction and opportunities to design new instruction.

While preservice and in-service teachers need practice designing and implementing digital writing lessons, this work also requires them to understand the theoretical underpinnings of the writing process and writing instruction integrated with technology. With the rapid advances in technology, it is not enough for preservice and in-service teacher to design a lesson using a familiar technology; they must understand the knowledge and theory that the instructional practice is built upon. This will allow them to continue to effectively integrate technology as it

continues to change and become more sophisticated.

The chapters in this book emphasize that teacher educators must make certain that preservice and in-service teachers in methods courses have in-depth understandings of digital writing and multimodal composition, rationales for these pedagogical practices, and an awareness of the affordances and constraints of these practices.

Working with Teachers in the K-12 Setting

Many teacher educators are committed to providing professional development to teachers in the K-12 setting. Teacher educators know that teachers' learning of how to teaching writing with technology is not always a seamless process. Most teacher educators recognize the need for teachers to have access to technology; however, just having computers, interactive whiteboards, tablets, or mobile devices is not enough. Even when teachers use technology in their daily lives, they might struggle to integrate it into their writing instruction. Therefore, teacher educators need to provide consistent and ongoing training. Teacher educators facilitating professional development need to teach teachers the specific ways technology can help them meet their pedagogical goals in the teaching of writing.

This implies that one-time professional development or training with specific tools is not enough. Teacher educators need to provide support that occurs over extended time periods. The gradual release of responsibility (Pearson & Tierney, 1983) is a good model for deep professional learning as it provides scaffolding before independent practice. Teachers need opportunities to see what digital writing instruction looks like, opportunities to practice with support, and opportunities to work independently with reflection.

Teacher educators also must remember that teachers cannot always make this transition on their own. Teachers need to collaborate and work with other teachers and professionals when learning how to integrate technology into their writing instruction. Teacher educators who lead professional development need to provide teachers with opportunities to collaborate. This might require extended conversations about how technology can best support instruction and create opportunities for the wide range of learners in the classroom. It might also require conversations about the best ways teachers can support each other in this work.

Beyond Professional Development

There is a concern that without deep pedagogical understandings and ongoing professional development, teachers will simply replace their traditional print-based activities without reflect-

ing on how their writing instruction can truly be transformed by digital writing and multimodal composing. Teacher educators need to make sure teachers recognize how technology is changing the various forms and formats of writing. Conversations between teacher educators and teachers should focus on how digital writing and multimodal composition might bridge students' personal and school writing practices providing rich engagement in writing. Teacher educators also must make certain teachers can provide a rationale for their instructional decision-making when integrating technology into writing instruction.

This concerns highlights the crucial need for ongoing support and professional development. Technology can allow teacher educators to create communities of practice that provides teachers opportunities to continue to grow as writers and teachers of writing. These communities can nurtures writers who in turn learn about how to better teach and talk about writing with students. Teacher educators should be considering how technology creates avenues to develop, continue, and sustain this learning.

Composition Coursework

Faculty at the college-level play an important role in how teachers perceive themselves as writers and users of technology. When teachers are students in classrooms that effectively integrate technology and writing, they have more opportunities to consider how they might design their future writing instruction. Many composition faculty are concerned with understanding how technology can facilitate an increase in students' knowledge about the writing process. Feedback and revision are critical for students' growth as writers; however, often this is viewed as a final grade. With technology, feedback no longer becomes equated with assessment. Rather, technological tools allow feedback to become an important stage in students' growth as writers. Teacher educators need to develop relationships with faculty members who teach composition courses so each is aware of the many ways composition courses are shaping teachers' identities as writers and practices as teachers.

The Future of Technology and Writing

'Bring your own device' policies, the Common Core Standards and the push for online standardized assessments, have been at the forefront of much discussion in the field of literacy education. These discussions have led schools and teachers to begin raising questions about how technology and digital media can be and should be integrated into the curriculum. Teacher educators should be leading the conversations that address how these policies are influencing writing instruction. Discussions with school administrators, teachers, and preservice teachers are necessary so that technology is effectively integrated into writing instruction in a way that does

not serve solely as an assessment or merely a replacement of print-based practices, but as an avenue for transforming teachers pedagogical practices surrounding the teaching of writing. Teacher educators need to continually research and examine their own practices. Methods classes for preservice and in-service teachers are a primary concern for many teacher educators. Methods courses are supposed to serve as a bridge to school settings so that digital writing and multimodal composing are practices that occur on university campuses and are effectively implemented into the K-12 setting. The field also needs more information about how preservice teachers integrate their knowledge of writing instruction into their first years of teaching and, if not, the necessary supports that first year teachers need to implement these pedagogical practices.

Continued research should also explore how teacher educators design professional development opportunities for writing teachers. Teacher educators should be asking, what does effective professional development look like and how can technology transform the ways teacher educators work with writing teachers. Teacher educators should be researching how technology can serve as a way to create professional development that sustains and continually develops teachers' practices, so that teachers are not only learning about how to implement technology for writing instruction, but so they can use technology for support and continued learning. Teacher educators should also explore how teachers are integrating technology into their writing instruction after professional development occurs.

For this work to occur, teacher educators need to have conversations amongst themselves as effective practices when working with preservice and in-service teachers in methods courses or teachers in professional development contexts. Handbook of Writing Research (McArthur, Graham, & Fitzgerald, 2006), The Journal of Writing Teacher Education, and the National Council of Teachers of English's Commission on Writing Teacher Education can support teacher educators' quest to implement effective writing instruction. However, teacher educators need many opportunities to closely examine the practices of other teacher educators in the field of writing, and more specific conversations are needed surrounding technology and writing instruction.

A Final Word

The editorial decision to publish this book as an open access document was deliberate. As noted in the chapters featured in this book, technology provides various affordances, such as increased opportunities for collaboration, conversations, and relationships. It is also a way to

disseminate knowledge to a wide range of people who can easily and freely access this material. The online repository (tinyurl.com/writingtech) allows for authors to share additional resources and materials with readers. We hope this book serves as a catalyst for teacher educators to continue their thinking about writing instruction using various technologies for creation and dissemination.

Arguably the continued evolution of technology means radical shifts in how we as teacher educators present and share information. Sharing a book that has open access through a Creative Commons (http://creativecommons.org/) license and is freely accessible online may have been a new experience for some authors and readers. However, some emerging e-texts contain embedded media that move beyond pictures and printed text to include movies, sounds, and interactive simulations. Others in our field are helping to redefine the notion of text by having living and breathing documents that are instantly updated and evolve with suggestions and feedback from readers. Some even become co-creations and blur the lines between author and reader. Technology allows for books to be published in a way that creates dynamic works that can continually be shaped and developed by authors and readers. Books, therefore, don't have to "end;" rather the text and its influence on the field, can continually grow, shift, and change.

These statements are meant to take away from the accomplishment of this book being delivered in a medium relatively new to our field (and arguably newer to many academics). Rather, we see this approach as one mechanism researchers and educators will consider as they research and teach about writing and, and with, and through technology. This is one additional push towards exploring various ways the medium is shaping and will continue to shape our understanding of writing.

The goal of this book was to present teacher educators the opportunity to explore the many ways that outstanding teacher educators are engaging preservice and in-service teachers in effective instruction regarding the teaching of writing using technology. These chapters demonstrate that integrating technology and writing instruction is on the forefront of teacher educators' agendas. We hope teacher educators can look across the field at what is consistent and what is unique in the ways their fellow colleagues are working with teachers in methods courses, in K-12 settings, and after professional development opportunities.

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Contributors

Abed, Farough. Farough Abed is Professor of Education in Education Technology of Central CT State University. Aside from his teaching, he is the director of the Educational Technology labs that support undergraduate and graduate courses, and provide faculty development. In addition, he is program director of the graduate and undergraduate courses in Education Technology and works with various departments within the School of Education and Professional Studies to integrate instructional design, visual design, and advanced learning experiences such as case studies and situation based instruction in curriculums. His area of research is Imagery and Cognition and can be contacted at abedf@.ccsu.edu.

Akhavan, Nancy. Nancy Akhavan is Assistant Professor in the department of Educational Research and Administration at California State University, Fresno. Previously, she was Assistant Superintendent of School Leadership for Middle Schools in Fresno Unified School District, a large urban district in California's Central Valley. She has worked as a district staff developer, principal, elementary school bilingual teacher, bilingual resource teacher, and professional development coordinator for over twentyfive years. Dr. Akhavan is passionate about providing a high quality education for all children through authentic, purposeful instruction. In addition to her work in school districts, she has provided staff development training across the nation to teachers grades K12 on topics as literacy, vocabulary development, writing, English Language Development, standards based instruction, and coaching. She has also provided professional development to school and district leaders on leadership, literacy and social justice. Her leadership work includes training teacher leaders and administrators in systems and culture change, school reform, and classroom based professional development. In addition to her work in classrooms and schools, she has written a number of professional books on best practices in literacy instruction, teaching struggling readers, and high quality instruction for English learners and can be contacted at nakhavan@csufresno.edu

Beach, Richard. Richard Beach is Professor Emeritus of English Education, University of Minnesota. His research interests are in response to literature, composition, and digital literacies. He is author or coauthor of Teaching to Exceed the English Language Arts Common Core State Standards (http://englishccss.pbworks.com); (with David O'Brien) Using iPad and iPhone Apps for Learning with Literacy Across the Curriculum (http://usingipads.pbworks.com), Teaching Writing Using Blogs, Wikis, and Other Digital Tools (http://digitalwriting.pbworks.com); and Teaching Literature to Adolescents (http://teachingliterature.pbworks.com).

He is currently President of the Literacy Research Association and can be contacted at rbeach@umn.edu.

Busch-Grabmeyer, Erin. Ms. Erin Busch-Grabmeyer is an English/Language Arts teacher at St. Louis High School. Currently in her eleventh year of teaching, Erin has taught grades 912, including AP Language and Composition. Erin completed her undergraduate education at Central Michigan University, Master's degree at Marygrove College, and continues her postgraduate education at CMU. In the summer of 2010, Erin participated in the Chippewa River Writing Project, a wonderful opportunity which renewed her passion for writing and literacy. Erin has presented at the Michigan Reading Association and National Council of Teachers of English conferences, and led several professional development sessions throughout the state. She continues to discover ways to change and improve her teaching methods; and has developed an interest in finding ways to use digital literacies in her teaching, specifically with writing instruction. She resides in Central Michigan with her husband and son and can be contacted at ekbusch@gmail.com

Collet, Vicki. Vicki S. Collet, Ph.D., is an assistant professor in the Department of Curriculum and Instruction at the University of Arkansas, Fayetteville. Her research interests include new literacies, instructional coaching, literacy instruction and assessment, and teacher education. Dr. Collet formerly taught at both elementary and secondary levels, worked as a literacy coach, and served as literacy curriculum coordinator for a large school district in the Western United States. She can be contacted at collet@uark.edu

Di Lauro, Frances. Dr. Frances Di Lauro is a Lecturer in the Writing Hub at the University of Sydney. Her research interests include the rhetoric of food; the place of rhetoric in protest and activism; music and lyrics as rhetorical devices; and the influence of institutional and religious rhetorics on contemporary communication. Her pedagogical focus is on cultivating rigorous approaches to research and academic integrity, and she coordinates and teaches a senior course in research and writing. Frances also coordinates and contributes to other Writing Hub courses and teaches workshops on EndNote and Wikipedia editing. With expertise in blended teaching and assessment practices, she develops formative and summative assessment tasks for use in hightech, networked classrooms and serves on the University's eLearning committee. She recently convened a symposium on the use of Wikimedia projects in higher education, and is currently collaborating with Wikimedia Australia on future educational initiatives. Frances has received two Faculty teaching awards and can be contacted at frances.dilauro@sydney.edu.au

Dismuke, Sherry. Sherry Dismuke is a Clinical Assistant Professor at Boise State University. Her research focuses on writing instruction and teacher education. Her recently completed doctoral dissertation focused on elementary classroom writing instruction and its links to teacher professional development. She spent 14 years as an elementary classroom teacher and can be contacted at dismuke.sherry@gmail.com

Espasa, Anna. Anna Espasa is Associate Professor of the Department of Psychology and Education at the Open University of Catalonia (UOC) and of the International Masters on elearning at UOC; specifically in the Teaching Processes training program. Director of Educational Psychology Degree (since March 2011). Cocoordinator of EdOnline Research Group which focuses on analysing educational supports to learn in online environment. She got her PhD in 2009 about feedback processes in online learning environment. Her research interests are on teaching and learning in online learning environments: Educational supports as feedback processes; Writing competency; Higher Education; Teaching presence and regulation and assessment of learning. More information of her recent publications, presentations and projects in http://edon.wordpress.com/ and her contact email is aespasa@uoc.edu

Gerber, Hannah. Hannah R. Gerber, Ph. D. is an assistant professor of literacy at Sam Houston State University. She teaches graduate courses in digital literacies and game studies. Her research agenda focuses on the pedagogical implications of videogames and gamebased learning. Gerber is the current chair of the CEE/NCTE Commission on New Literacies, Technologies, and Teacher Education, and is coauthor of forthcoming Game Night at the Library: It's More than Just Play (Gerber & Abrams, 2014) and Building Literate Connections through Videogames and Virtual Worlds (Gerber & Abrams, 2014). Her contact email is hrg004@SHSU.EDU

Guasch, Teresa. Teresa Guasch is Associate Professor of the Department of Psychology and Education at the Open University of Catalonia (UOC). She has been director of the Educational Psychology Programme (20062011). She is also lecturer of the International Masters on elearning. She holds a PhD in Psychology, from Ramon Llull University (2003), with European PhD accreditation. While a PhD candidate she conducted part of her research at the University of Nebraska, University of Kentucky and University of Helsinki. She was lecturer at Ramon Llull University (20002001) and International University of Catalunya (20012003). She has been Fellow Researcher of the Centre for Learning Sciences and Technologies at the Open University of the Netherlands (2011 2012). Her research area is focused on the process of teaching and learning in online learning environments, with special focus on teachers

training and educational supports in writing processes in online environments, such as efeedback and peer feedback. Her main concern is to study the elements that contribute to scaffold better teaching and learning in computersupported environments. She led and participated in different research projects at national and European level, contributing to a better understanding of teaching and learning processes in virtual learning environments. She cocoordinates the EdOnline Research Group and at the moment, she leads the research project: Efeedback in Collaborative Writing processes: development of teaching and learning competencies in online environments Ministry of Science and Innovation of Spain. More information of her recent publications, presentations and projects in http://edon.wordpress.com/ and her contact email is tguaschp@uoc.edu

Hicks, Troy. Dr. Troy Hicks is an associate professor of English at Central Michigan University and focuses his work on the teaching of writing, literacy and technology, and teacher education and professional development. A former middle school teacher, he collaborates with K–12 colleagues and explores how they implement newer literacies in their classrooms. Hicks directs CMU's Chippewa River Writing Project, a site of the National Writing Project, and he frequently conducts professional development workshops related to writing and technology. Also, Hicks is author of the The Digital Writing Workshop (Heinemann, 2009) and a coauthor of Because Digital Writing Matters (JosseyBass, 2010) as well as numerous journal articles. In March 2011, Hicks was honored with CMU's Provost's Award for junior faculty who have demonstrated outstanding achievement in research and creative activity. Most importantly, he is the father of six digital natives and is always learning something new about writing and technology from them. He can be contacted at hickstro@gmail.com

Hyler, Jeremy. Mr. Jeremy Hyler is a middle school English teacher at Fulton Middle School located in Middleton, Michigan. His primary focus is 7th and 8th grade English where he works with approximately 120 students on a daily basis. He became a teacher consultant for the Chippewa River Writing Project, a satellite site of the National Writing Project, after attending the Summer Institute in 2010. Since then, he has been implementing new writing strategies along with the use of technology into his classroom. In addition to delivering numerous professional development opportunities to different districts, he has presented at conferences such as the Michigan Reading Conference (MRA) and the NCTE national conference. Currently he is coauthoring a book with Dr. Troy Hicks about the use of technology in the English classroom while meeting the Common Core National Standards. He resides with his wife and three children in West Michigan. He can be contacted at almaballer40@gmail.com

Kavadlo, Jesse. Jesse Kavadlo is Professor of English and Humanities, Writing Center Director, and University Seminar Coordinator at Maryville University of St. Louis. He received his Ph.D. in English from Fordham University. Jesse teaches face to face and online classes about writing, American literature, film, and special topics in the Humanities, including monsters, superheroes, technology, conspiracies, rock & roll, and representations of hell. He is the author of Don DeLillo: Balance at the Edge of Belief and has published numerous journal articles and book chapters about teaching writing and literature, writing center pedagogy, contemporary fiction, and popular culture. Jesse is the President of the Don DeLillo Society. He can be contacted at jkavadlo@maryville.edu

Kirschner, Paul. Paul A. Kirschner (1951) is professor of Educational Psychology and Programme Director of the Learning and Cognition programme at the Centre for Learning Sciences and Technologies at the Open University of the Netherlands. He is also scientific director of the Netherlands Laboratory for Lifelong Learning. He is an internationally recognized expert in his field. He is a past President (20102011) of the International Society for the Learning Sciences, a member of the Scientific Technical Council of the Foundation for University Computing Facilities (SURF WTR), is associate editor of Computers in Human Behavior and chief editor of the Journal of Computer Assisted Learning, is author of the highly successful book Ten steps to complex learning, and editor of two other recent books (Visualizing Argumentation and What we know about CSCL). He can be contacted at paul.kirschner@ou.nl

Martin, Susan. Susan D. Martin is a Professor in the Literacy Department at Boise State University. She taught writing as an elementary teacher for 18 years. She now teaches both undergraduate and graduate courses on writing/writing instruction. Her research interests include effective elementary writing instruction, teacher education in writing instruction, and selfstudy of teacher education practices and can be contacted at smartin@boisestate.edu

McIntyre, Beverly. Beverly McIntyre taught language arts and social studies in public schools for 31 years. Her experience ranged from kindergarten to the middle school levels, and her certifications included gifted education and National Board Certification. After retiring from public school teaching in 2009, she earned her Ph.D. from the University of North Carolina at Charlotte. She currently teaches undergraduate and graduate courses in literacy education as an adjunct for the University of North Carolina at Charlotte and provides professional development workshops for teachers. She also enjoys lecturing about eighteenth century

domestic life and volunteering with various state and national historic sites and can be contacted at mcintyre.beverly@gmail.com

O'Brien, David. David O'Brien is Professor of Literacy, University of Minnesota. His research interests are in adolescent literacy, literacy across disciplines, and digital literacies. In addition to (with Richard Beach) Using iPad and iPhone Apps for Learning with Literacy Across the Curriculum (http://usingipads.pbworks.com), he is author of "Struggling Adolescents' Engagement in Multimediating: Countering the Institutional Construction of Incompetence" in Reconceptualizing the Literacies in Adolescents' Lives, and Reading Multimodally: What is Afforded" in the Journal of Adolescent and Adult Literacy. He can be contacted at dobrien@umn.edu

Price, Debra. Debra P. Price, PhD, is a Professor in the Language, Literacy and Special Populations Department and Director of the Doctoral Program in Reading at Sam Houston State University in Huntsville, Texas. She is a member of and serves as a reviewer for the Literacy Researchers Association and serves as a member, reviewer and division chair elect with the Association of Literacy Educators and Researchers. Her research interests focus on developing principals into literacy leaders, literacy coaches, emergent literacy and helping classroom teachers bridge the gap between home and school digital literacies. She can be contacted at EDU_DPP@SHSU.EDU

Reinking, David. David Reinking is the Eugene T. Moore Professor of Teacher Education in the School of Education at Clemson University. During the 201112 academic year, he was a visiting distinguished professor at Johns Hopkins University, and during the Spring of 2013, he was a visiting professor at the Università degli Studi della Tuscia in Viterbo Italy. His scholarship focuses on understanding literacy and literacy instruction in relation to the unique affordances, demands, and social influences of digital communication. Related to those interests, he has received funding for his research through the U.S. Department of Education. His work has been published in highly regarded research journals and other outlets, and he was lead editor of the Handbook of Literacy and Technology (1998, Erlbaum), which was given special recognition by the American Library Association and awarded the Edward B. Fry Book Award by the National Reading Conference. From 20012007, he served as coeditor of Reading Research Quarterly (20012007) and previously was editor of the Journal of Literacy Research (19942000). He has served as President of the Literacy Research Association, a leading professional organization for literacy researchers. In 2008, he was inducted into the Reading Hall of Fame associated with the International Reading Association. His work has received international attention through projects and invited talks in Colombia, Finland, Italy, the Nether-

lands, Singapore, Sweden, and the United Kingdom. He can be contacted at reinkin@clemson.edu.

Rhodes, Joan. Dr. Joan A. Rhodes, Associate Professor of Reading and Early/Elementary Education is a member of the graduate faculty for the Ph.D. in Education program in which she teaches courses in professional development and instructional theory. During her tenure at VCU, Dr. Rhodes led six study abroad programs to diverse countries including New Zealand, Hungary, Italy and Costa Rica. Rhodes served as the principal investigator for multiple grantfunded projects, totaling more than $ 9.7 million. She was awarded the VCU School of Education Distinguished Scholar Award in 2007 and the School of Education Alumni Council Faculty Award for Exemplary Application of Technology in 2012. Before joining the VCU faculty in 2003, Rhodes was an assistant professor at Auburn UniversityMontgomery and adjunct faculty at Texas A&MTexarkana and George Mason University. She has over 29 years of teaching experience at the preschool, elementary, middle school and collegiate levels and has served as an English as a Second Language educator and reading specialist. She can be contacted at jarhodes2@vcu.edu

Rish, Ryan. Ryan Rish is an assistant professor in the English Education program at Kennesaw State University. His research focuses on how adolescents' literacy practices and identities are mediated by digital tools within and across personal, school, and community spaces. He can be reached at rrish1@kennesaw.edu.

Shetler, Angela. Angela M. Shetler is an Associate Lecturer in the Writing Hub at the University of Sydney. Her experience and expertise in professional writing and digital communication informs her teaching as the course designer and coordinator for WRIT1000: Writing English – Style and Method. An English language instructor with international teaching experience, Angela also contributes to other Writing Hub courses at both the undergraduate and postgraduate levels. She is the recipient of the 2012 Faculty of Arts and Social Sciences' Teaching Initiative Award for a collaborative project to explore the development and implementation of an online writing support system to connect students with peer writing tutors. Angela's research interests also include copyright across cultures and the intersection of content, authorship, and algorithms in digital publishing models. She can be contacted at angela.shetler@sydney.edu.au

Smoker, Amanda. For the last eight years, Ms. Amanda Smoker has been teaching 7th grade English at Meridian Public Schools, with a mix of some 6th, 10th, and 11th grade English classes mixed in. She became a Chippewa River Writing Project teacher consultant in 2009. Inspired by her work during the Summer Institute, Amanda has dedicated a great deal of time and effort to developing her writing curriculum for her students. Additionally, she enjoys planning and leading professional development sessions for teachers and presenting at local and national conferences. She can be contacted at smoke1ae@gmail.com

Valerie, Lynda. Lynda M Valerie's is an Associate Professor in the Department of Reading and Language Arts. She brings her experience as a reading consultant in teaching courses on diagnosis, intervention, literacy for diverse populations and teaching writing. Her areas of research interest include: application of family/community resources to impact literacy, utilization of appropriate assessments to inform effective interventions of reading and writing and developing teachers as writers and teachers of writing. In addition, she is director of the Central Connecticut Writing Project (CCWP), which is a site for the National Writing Project. CCWP is an educational initiative for teachers of all disciplines that promotes the teaching of writing through best practice, teacher inquiry, and professional writing. Dr. Valerie was instrumental in initiating the Central Connecticut Student Writing Project, a summer writing program. She has seen, first hand, that participation in thoughtful reading and writing activities can change and enhances students' concept of themselves and their perceptions of world. She can be contacted at valerie_lym@mail.ccsu.edu

Vanderpool, Dawna
A graduate of Clarion University of PA, Vanderpool has taught middle school English for twenty years in DuBois, Pennsylvania. She received her M. Ed. in Curriculum and Instruction from Gannon University. In 2011 she achieved certification from the National Board for Professional Teaching Standards in English Language Arts/Early Adolescence. She serves on the Pennsylvania state committee for testing, reviewing data and items for the state reading and writing assessments. She has presented at numerous national and state conferences on the topics of value-added assessment and integrating technology into the language arts classroom, among others. She is proud to teach at the DuBois Area Middle School, which is a three-time PA Don Eichhorn Schools: School to Watch designee. She can be contacted at DVanderpool@dasd.k12.pa.us

Werner-Burke, Nanci. Nanci Werner-Burke has been a professional educator for twenty years. During that span, she has been a librarian, a reading and English teacher for middle and high

school students, and a teacher educator. Nanci holds a doctorate in Rhetoric and Linguistics from Indiana University of Pennsylvania and has taught at Mansfield University of PA for the past twelve years. Nanci has been the director of the Endless Mountains Writing Project, a site of the National Writing Project, for seven years. She has presented at numerous national and state conferences and is a contributing author to the 2011 text Revision Strategies for Adolescent Writers: Moving Students in the Write Direction. She is currently coauthoring a textbook for teachers, titled Reimagining Research Writing: Piloting Passion for Inquiry and NonFiction, which focuses on modernizing the classroom research paper. She lives in a cabin, in a wood, with her daughter and husband. She can be contacted at nwernerb@mansfield.edu

Wickstrom, Carol. Carol D. Wickstrom is an Associate Professor in the Teacher Education and Administration program at the University of North Texas. She teaches undergraduate and graduate courses in literacy assessment, theory, and practice. Her research focuses on preservice teachers as they learn about writing instruction, inquiry, and technology and inservice teachers as they engage in Culturally Mediated Writing Instruction with adolescent English learners. As the Director of the North Star of Texas Writing Project, she enjoys having many opportunities to work with classroom teachers and their students. When she is not teaching (her first love), she is travelling, hiking, biking, sailing, walking, or just about anything else that takes her outdoors. She can be contacted at Carol.Wickstrom@unt.edu

Editors

Kristine E. Pytash is an assistant professor in Teaching, Learning and Curriculum Studies at Kent State University's College of Education, Health, and Human Services, where she co-directs the secondary Integrated Language Arts teacher preparation program. She was a former high school English teacher. Her research focuses on disciplinary writing, writing instruction in juvenile detention facilities and the literacy practices of youth in alternative schools and juvenile detention facilities. Her recent work has appeared in the Journal of Adolescent & Adult Literacy, English Journal, Voices from the Middle, and Middle School Journal.

Richard E. Ferdig is the Summit Professor of Learning Technologies and Professor of Instructional Technology at Kent State University. He works within the Research Center for Educational Technology and also the School of Lifespan Development and Educational Sciences. He earned his Ph.D. in Educational Psychology from Michigan State University. He has served as researcher and instructor at Michigan State University, the University of Florida, the Wyzsza

Szkola Pedagogiczna (Krakow, Poland), and the Università degli studi di Modena e Reggio Emilia (Italy). At Kent State University, his research, teaching, and service focus on combining cutting-edge technologies with current pedagogic theory to create innovative learning environments. His research interests include online education, educational games and simulations, and what he labels a deeper psychology of technology. In addition to publishing and presenting nationally and internationally, Ferdig has also been funded to study the impact of emerging technologies such as K-12 Virtual Schools. Rick is the Editor-in-Chief of the International Journal of Gaming and Computer Mediated Simulations, the Associate Editor-in-Chief of the Journal of Technology and Teacher Education, and currently serves as a Consulting Editor for the Development Editorial Board of Educational Technology Research and Development and on the Review Panel of the British Journal of Educational Technology.

Timothy V. Rasinski is a professor of literacy education at Kent State University. His scholarly interests include reading fluency and word study, reading in the elementary and middle grades, readers who struggle, and parental involvement. His research on reading has been cited by the National Reading Panel and has been published in journals such as Reading Research Quarterly, The Reading Teacher, Reading Psychology, and the Journal of Educational Research. Tim served on the Board of Directors of the International Reading Association. He has also served as co-editor of The Reading Teacher and the Journal of Literacy Research. In 2010 Tim was elected to the International Reading Hall of Fame. Prior to coming to Kent State Tim taught literacy education at the University of Georgia. He taught for several years as an elementary and middle school classroom and Title I teacher in Nebraska.