

Digital storytelling: An emerging tool for student and teacher learning

by

Cynthia Marie Garrety

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY

Major: Education (Curriculum and Instructional Technology)

Program of Study Committee:
Denise Schmidt, Major Professor
Ann Thompson
Carol Fuhler
Lori Norton-Meier
Corly Brooke

Iowa State University

Ames, Iowa

2008

Copyright © Cynthia Marie Garrety, 2008. All rights reserved.

UMI Number: 3383367

Copyright 2009 by
Garrety, Cynthia Marie

All rights reserved

INFORMATION TO USERS

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleed-through, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.



UMI Microform 3383367
Copyright 2009 by ProQuest LLC
All rights reserved. This microform edition is protected against
unauthorized copying under Title 17, United States Code.

ProQuest LLC
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106-1346

TABLE OF CONTENTS

| | |
|---|-----|
| CHAPTER 1. GENERAL INTRODUCTION | 1 |
| Dissertation Organization | 4 |
| CHAPTER 2. USING DIGITAL STORYTELLING IN EDUCATION: FIVE EMERGENT GENRES | 6 |
| Abstract | 6 |
| Introduction | 7 |
| History of Storytelling | 8 |
| Storytelling Meets Digital Media | 11 |
| Digital Storytelling Genres | 14 |
| Recommendations for Future Research | 26 |
| Conclusion | 27 |
| References | 29 |
| CHAPTER 3. NARRATIVE INQUIRY: A METHODOLOGY FOR EXAMINING REFLECTION IN DIGITAL STORIES | 35 |
| Abstract | 35 |
| Narrative Beginnings | 36 |
| Storytelling as Reflective Practice | 39 |
| Digital Storytelling as a Tool for Reflective Practice | 41 |
| Ethnography and Narrative Inquiry: Methodologies for Understanding Pre-service Teacher Experiences | 42 |
| Putting Narrative Inquiry into Practice: Examining Pre-service Teachers' Digital Stories of Reflection | 48 |
| Using Narrative Inquiry for Examining Digital Storytelling as a Tool to Support the Development of Reflective Practice | 51 |
| Data Analysis using Narrative Inquiry: A Process of Multiple Lenses and Perspectives | 57 |
| Ethical Considerations | 64 |
| Summary | 66 |
| References | 68 |
| CHAPTER 4. DIGITAL STORYTELLING AND ITS ROLE IN THE DEVELOPMENT OF REFLECTIVE PRACTICE: EXAMINING THE STORIES OF THREE PRE-SERVICE TEACHERS | 71 |
| Abstract | 71 |
| Introduction | 72 |
| Literature Review | 73 |
| Methodology | 82 |
| Findings | 102 |

| | |
|--|-----|
| Conclusion | 121 |
| References | 125 |
| CHAPTER 5. GENERAL SUMMARY | 131 |
| Key Findings from the Dissertation | 132 |
| Recommendations for Further Research | 134 |
| References | 136 |
| APPENDIX A. GUIDING QUESTIONS FOR INTERVIEWS | 138 |
| APPENDIX B. INFORMED CONSENT DOCUMENT | 140 |
| APPENDIX C. HUMAN SUBJECTS DOCUMENTATION | 144 |
| APPENDIX D. COURSE SYLLABUS | 147 |
| APPENDIX E. COURSE PRACTICUM EXPERIENCE SCHEDULE | 154 |
| APPENDIX F. FINAL CONFERENCE CHECKLIST | 156 |

LIST OF TABLES

Chapter 1

| | |
|--|---|
| Table 1. Visual Portrait of a Story..... | 4 |
|--|---|

Chapter 3

| | |
|--|----|
| Table 1. Parallels between Reflective Learning and Learning Through Storytelling..... | 41 |
| Table 2. Data Collection | 54 |
| Table 3. Narrative Inquiry Analysis Procedures | 59 |

Chapter 4

| | |
|--|----|
| Table 1. Digital Storytelling Reflective Assignment Requirements | 90 |
| Table 2. Literacy Methods Course and Practicum Schedule | 91 |
| Table 3. Data Collection | 97 |
| Table 4. Continuum for reflective thinking of pre-service teachers | 96 |

LIST OF FIGURES

Chapter 1

| | |
|---|---|
| Figure 1. Visual Portrait of a Story..... | 4 |
|---|---|

Chapter 3

| | |
|---|----|
| Figure 1. Interpretive Methodology looking at Culture and Phenomenon..... | 45 |
|---|----|

Chapter 4

| | |
|---|-----|
| Figure 1. Visual Portrait of a Story..... | 81 |
| Figure 2. Excerpts from Chris' Digital story..... | 105 |
| Figure 3. Excerpts from Brenda's Digital story | 106 |
| Figure 4. Excerpts from Molly's Digital story | 108 |
| Figure 5. Continuum of Reflection in Teacher Education Mentoring Experience..... | 118 |

CHAPTER ONE. GENERAL INTRODUCTION

Becoming a teacher is a journey of twists and turns, each one with the potential of making a lasting impact on a future teacher. How pre-service teachers navigate the twists and turns of life experiences has the potential to become a story that may inspire and inform others in the field of teacher education. There are a variety of tools that pre-service teachers, digital natives by today's standards, may choose to use to chronicle and record their experiences. This dissertation examines digital storytelling as a possible tool to assist pre-service teachers as they reflect on and learn from experiences that make up the teacher education program.

My own journey into digital storytelling and reflection began with a high school multimedia project that integrated photographs that our group took to illustrate a popular song that we selected. In the late seventies that meant a slide carrousel and a cassette tape player, but this was my first experience with storytelling by using images and music. Now, fast-forward my life to my undergraduate studies in child development. As I sat for hours writing in the child development laboratory watching children and writing anecdotal observations, little did I know that these episodes were my first experiences with using reflective practice as a tool for professional growth. My career in early childhood education was grounded in the Head Start program and there I had many incredible opportunities, including the chance to learn about and work with Carlina Rinaldi and the Reggio Emilia project. I learned many things about myself as a professional and how children learned through my work with documentation panels. Documentation panels make learning visible to children by displaying visual images of them working and learning in the classroom combined with their words and conversations. Through this work I began to make

connections between the use of photographs and stories of learning. After almost two decades as a preschool teacher, I decided to return to the classroom to pursue my Masters and then my Doctorate degree. During my graduate work, I reconnected with the philosophy of Dewey and my own work as an experiential learner and storyteller. During a seminar led by Dr. Glen Bull from the University of Virginia, I heard the words digital story and my own personal journey of learning about and with digital storytelling began.

Both Bruner (1986) and Dewey (1944) pointed to storytelling as an important piece within a constructivist pedagogy that allows learners to connect prior experiences and knowledge with new experiences in order for synthesis and learning to occur. As a tool for reflective practice for pre-service teachers, storytelling may enable learners to explore their own stories and make connections with their own learning on the way to becoming a teacher. Digital media has become an accessible tool for pre-service teachers and the potential for adding images, audio, video clips and narration to reflective stories holds promise as a learning tool.

Digital storytelling is a process that blends traditional storytelling with the technologies and media of the digital age-images, video, audio and personal narrative (Armstrong, 2003). Developed by Joe Lambert, Dana Atchley and Nina Mullen in the early nineties, digital storytelling provides learners with media that allows them to tell their stories and also to preserve their stories for reflection at a later date (Barrett, 2006; Lambert, 2007). Pre-service teachers have used digital stories to capture and save classroom experiences for reflection in order to examine their teaching and pedagogical choices in the classroom (Tendero, 2006). Digital storytelling as a tool for reflective practice has been examined in the literature in the pre-service teacher education classroom (Barrett, 2006; Hall & Hudson,

2006; Kim, 2006; Tendero, 2006). Research has suggested that the use of digital storytelling motivated pre-service teachers to understand and grasp more complex academic content and concepts and allowed for more peer to peer learning connections (Dupain & Maquire, 2005). Digital storytelling is not being touted as the premier tool in helping pre-service teachers understand their own learning and professional growth during their teacher education program. However, digital storytelling is a tool that may be attractive to today's pre-service teachers because of their status as digital natives. A digital native is a person that has grown up with digital technologies, unlike a digital immigrant who did not grow up with digital technologies but adopted them later (Prensky, 2005).

Within the process of digital storytelling, the aspect of storytelling itself is never lost. Ohler (2008) stresses the importance of story and has focused much of his work on literacy development that is associated with storytelling and digital video production. His work with students is centered on the task of writing the story and then the collaborative process between students for editing and revising the story. During the process of writing a digital story, students must develop and finalize the script and the storyboard before they ever begin to work with technology. Within the storytelling process, Ohler developed a story mapping process that I also use in my work with pre-service teachers (See Figure 1). The process of story mapping, or the visual portrait of the story, gives students the chance to talk with peers as their stories develop and encourages students to tell story experiences rather than a series of chronological events.

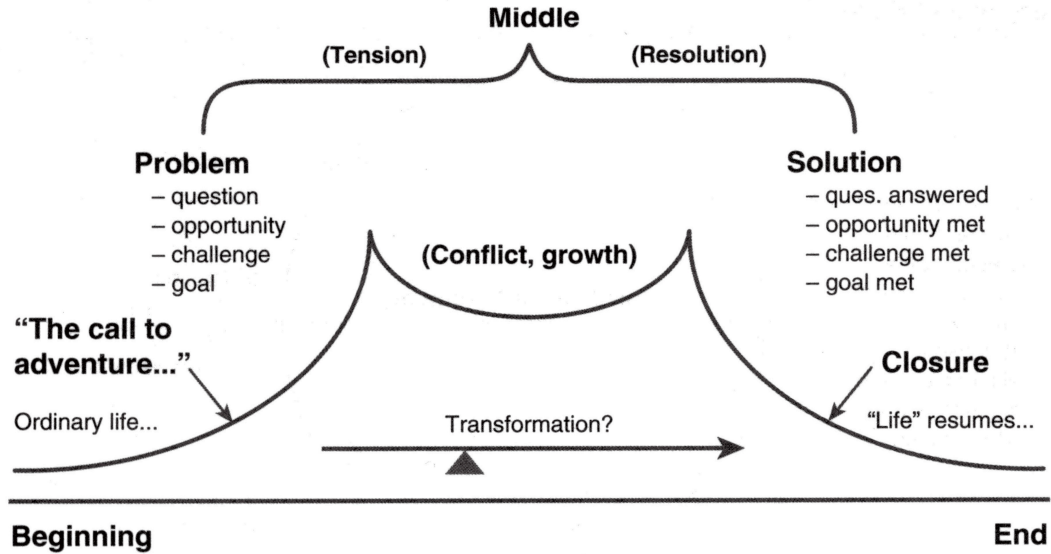


Figure 1: Visual Portrait of a Story. From *Digital Storytelling in the Classroom: New Media Pathways to Literacy, Learning, and Creativity* by J. Ohler, 2008, Thousand Oaks: Corwin Press. Reprinted with permission of the author.

Dissertation Organization

This dissertation is organized into three articles to be submitted for publication. Article one reviews the literature surrounding the use of digital storytelling in education. Although digital storytelling has been met with enthusiasm in the education community, relatively few examples of empirical research in the field have been published to date. Through a comprehensive review of the literature surrounding the use of digital storytelling in education, one specific genre, the use of digital storytelling as a tool to support the development of reflective practice among pre-service teachers became the foundation of this dissertation. This article has been submitted to the *Journal of Research on Technology and Teacher Education* and uncovers five distinct genres that have been identified within the

literature surrounding the use of digital storytelling in education. Article two describes how the use of narrative inquiry as a research methodology can be used to examine using digital storytelling as a form of reflective practice in teacher education. This article seeks to demystify the narrative inquiry process by explaining the steps involved using this methodology during data collection and data analysis. Careful attention is paid to the connections between narrative inquiry methodology and digital storytelling as a narrative endeavor used to chronicle the experience of pre-service teachers as they develop their teaching knowledge and skills. This article will be submitted to *Qualitative Studies in Education*. The third article reports the results from a research study where digital storytelling as a tool for reflective process during a literacy methods course that included a semester long practicum experience. This article will be submitted to *The Journal of Teacher Education*.

Following the articles is a general conclusion that summarizes the results of the articles and the study conducted. References can be found at the end of each article. Appendices follow that contain documents that further illustrate key points within the articles as well as documentation of human subjects review procedures.

CHAPTER 2. USING DIGITAL STORYTELLING IN EDUCATION: FIVE EMERGENT GENRES

A paper submitted to *The Journal of Research on Technology and Education*

Cynthia M. Garrety

Abstract

Digital storytelling combines the art of telling stories with digital tools such as graphics, audio and video. This article reviews the literature documenting the evolution of using digital storytelling in education, but more importantly, five distinct genres emerge from this body of literature that further define digital storytelling and its value in education. The five genres identified are traditional stories, learning stories, project-based stories, social justice and cultural stories, and stories grounded in reflective practice. Individual characteristics of each genre are described and findings from research studies documenting the use of digital storytelling in each genre are summarized.

“Every person is born into life as a blank page – and leaves as a full book. Our lives are our story, and our story is our life. Story is the narrative thread of our experience – not what literally happens, what we tell each other and what we remember.” Christine Baldwin in *StoryCatcher* (2005, p. ix)

Introduction

The Sundays of my youth were spent with my extended family gathered together for dinners on the farm. What made these dinners special were the stories that were told and shared around the table. To my young eyes it seemed the stories were always about my parents, aunts, uncles, and grandparents, detailing their escapades growing up on the farm. They were usually told with a healthy dose of humor and laughter. As I became an adult, the stories shifted to include those of myself and my younger sister and our own delightful stories as the ‘city kids’ who came to the farm and experienced it in their own ways. The day my grandfather died, a group of family and friends gathered in his hospital room. Those same stories, now well worn with laughter and time, were shared as we all entertained Grandpa. Since then, my family often gathers around photo albums and recounts those same stories as a way of holding tight to the memories that make up the fabric our family’s story. It would be many years before my graduate studies would lead me full circle, and I would find myself immersed in the value of storytelling as a way of learning, remembering and sharing knowledge.

During the 1990s a personal storytelling renaissance took place (Lambert, 2006), which when coupled with the influx of technology into the mainstream became the digital storytelling movement. A blending of folk music and oral storytelling, digital storytelling paired personal narrative and digital photography into an extension of everyday storytelling.

As digital storytelling became more and more popular and word spread, educators began to look for ways to use this innovation in PreK-12 classrooms. This article will provide a review of the literature that documents the evolution of storytelling to digital storytelling and the use of digital storytelling in education. As digital storytelling, a melding of storytelling and digital media, has grown, so has interest in using it as an educational tool. From this literature review, five distinct genres have emerged that further define digital storytelling and its use and possibilities with in education.

History of Storytelling

A journey into the use of digital storytelling in education must begin with a brief look at the history of storytelling in our culture. Many of us have memories of sitting on the lap of a special adult and hearing a well-loved story repeated for the hundredth time. Stories told by a familiar voice draw us into a tale with the same enthusiasm that captured us the first time we heard the story. Stories can engage our minds, challenge our beliefs and ignite old memories to the extent that we want to hear it retold again and again. Donald Davis described storytelling as “painting a picture instead of taking a photograph” (Macquire, 1998, p. 24). Words are combined and delivered in such a way that they construct a picture in the mind of the listener and drawing the listener into the story deeper and deeper with each phrase. The importance of storytelling is well documented, and its function and purpose throughout time has given mankind a glimpse into cultures and a look at human beings as they lived their lives and evolved over time (Collins & Cooper, 1997; Sawyer, 1990).

Storytelling has its beginnings in the fields and valleys of tribal villages. Phrases were first constructed as chants and rhythms that accompanied people as they worked and carried out their daily chores. Much like a child talks or sings to himself as he plays and does his

work, Native Americans developed rhythmic chants while they ground corn, sharpened weapons, paddled canoes and made food for the tribe (Sawyer, 1990). These impromptu creations were developed in first person narrative and were often used for purposes of accompaniment or entertainment (Dyson & Genishi, 1994; Sawyer, 1990). Instruments were added and the chants grew into rhythmic stories, often accompanying ceremonial dancing. In many Native American tribes the traditions that first identified the purposes and functions of storytelling still live on and thrive. One example comes from the Western Apache who use storytelling to describe incidents or events with special attention to the connection of that incident to the person telling the story (Basso, 1996). As the third person narrative became popular tribes began to choose a storyteller who was entrusted with the tribe's stories, memories and traditions. This very sacred position was bestowed upon a highly respected member of the tribe, thus the storyteller position was one that carried great prestige and honor (Dyson & Genishi, 1994; Sawyer, 1990).

Many of the first stories told were reflections of the standards and expectations of tribal behavior. Youth were taught through these stories about the tribe's ideals, including respect, sacrifice, and good conduct. The stories represented the tribe's belief that these lessons were important for the welfare of the tribe or culture in general (Sawyer, 1990). In this way, storytelling became a useful and necessary way to protect cultural values and transmit traditions and information to future generations (Patterson, 1999).

Near eastern cultures also placed great emphasis on the importance of the person entrusted with the keeping of stories and the history of the people. Celtic cultures called their storytellers "bards" and considered them some of the most highly respected members of their communities (Patterson, 1999). Over time in many cultures these stories grew into myths and

legends. Temples became the stages for many of the first plays, which told stories of spiritual beliefs and cultural development (Sawyer, 1990). Here again, knowledge was transferred from generation to generation through various types of stories, cultural beliefs and events.

In the 1960s folk culture once again turned to storytelling as a voice for cultural activism and as a way to capture the history of a rapidly changing people. Storytelling has been called, “art for the people” (Lambert, 2006). During this time period people embraced not only the sounds of their own voices, but used stories to express their views, invite responses and weave their experiences into historical moments that were treasured for decades to come. The folk songs inspired stories with musical lyrics that gave voice to the struggle of a generation that are still recognized and familiar to many people today.

Storytelling has a variety of functions within human thought and memory. Shank (1990) perhaps put it best when he discussed storytelling as fundamental to human understanding. Human beings use stories to organize experiences within memory. Our ability to recall events and information is connected to the ability to recall a story surrounding the information (Baldwin, 2005; Shank, 1990). In fact, Dewey (1944) placed story at the very core of human existence and numerous authorities support this premise as a basic ingredient in the learning process (Bruner, 1986; Collins & Cooper, 1997; Shank, 1990).

Since its origin, storytelling has functioned as an educational tool. Whether it was used as a way to explain traditions and expectations of a tribal people or to teach a generation about community activism, stories educate learners throughout society. Storytelling in its many forms can be used to inspire, educate, record events, entertain and pass along cultural traditions and expectations (Collins & Cooper, 1997). As technology evolved in our culture, it began to weave its way into storytelling, giving rise to a movement that has been described

as digital storytelling. The introduction of images and media in digital format and the ever-changing format of technology applications and hardware have the ability to change the way we tell stories and the purpose of storytelling in our culture. Storytelling will change and evolve as educators begin to use digital storytelling in the classroom in its various forms and genres. This article investigates how the partnership between storytelling and digital media began and examines digital storytelling uses in education. In the beginning there were two idealistic storytellers and a dream of helping the everyday person tell his or her story with the use of new but accessible digital technologies. The next section of this article describes the evolution of digital storytelling involving a group of committed storytellers and newly accessible digital media tools.

Storytelling Meets Digital Media

The Northern California folk culture turned to storytelling as a voice for cultural activism and as a way to capture the history of a rapidly changing people during the 1960's. Joe Lambert and Dana Atchley blended their philosophies and talents to create the media format that we now call digital storytelling (Lambert, 2006). According to Lambert (2006), "digital storytelling is rooted fundamentally in the notion of democratized culture that was the hallmark of the folk music, re-claimed folk culture, and cultural activists tradition of the 1960's" (p. 2). While folk songs engaged a generation in telling their stories, education was not so quick to welcome storytelling into the classroom as a learning tool.

Although story time is a staple in early childhood education, one rarely observes learners above the fourth grade engaged in a storytelling activity, which is in direct conflict with theorists in education who tout story as a primary tool in learning and memory (Banaszewski, 2005). In his study that focused on teachers who had recently completed a

digital storytelling project in the classroom, Banaszewski (2005) noted the dangers of producing digital video projects in the classroom without the fundamental skills involved in storytelling. Without story literacy, the process of adding digital media becomes a form of repackaging information with new bells and whistles and is not an exercise in digital storytelling. Asking students to present information learned combined with digital images, audio, narrative and text requires them to know how to tell a story in order to synthesize the information. The point is not just to reformat it in a different way as a digital report or slideshow (Banaszewski, 2005). Story literacy, according to Banaszewski (2005), is the very foundation of digital storytelling. In fact, Bruner (1986) highlighted the importance of story in our lives as a tool to help us get from what somebody says to what they meant. Digital storytelling appears to have the potential to assist learners in making important connections as they assimilate and synthesize information through the use of story literacy and the introduction of digital technologies.

Digital storytelling has been defined by several individuals over the years and used in many contexts, but for the purpose of this article we examined digital storytelling as a process originally developed by Joe Lambert, Dana Atchley and Nina Mullen in San Francisco in the early nineties. In 1993, Lambert, Atchley and Mullen founded the non-profit media arts organization known as The San Francisco Media Center in response to more affordable personal computer technology and user-friendly digital editing software (Paull, 2002). In 1996, the organization became known as the Center for Digital Storytelling and is still active worldwide today. Early collaboration with non-profit groups, activists and educators in the San Francisco area lead to some of the first digital storytelling projects in schools (Banaszewski, 2005). Facilitators and storytellers who trained at the Center for

Digital Storytelling began to work in schools using an approach to digital storytelling that emphasizes personal voice and facilitative teaching methods.

Lambert's (2006) framework for the conception and development of digital stories is grounded in seven elements of constructing a multimedia story with an emphasis on the storytelling process. The seven elements of digital storytelling include point of view, emphasis on the dramatic question, emotional content, the gift of the storyteller's voice, soundtrack, economy and pacing. Each element builds upon the next to create a dynamic and meaningful story. Although Lambert's work marked the beginning of the so-called digital storytelling movement, similar work was being done in the business, health care and political arenas simultaneously. With the publication of Lambert's (2002) book, *Digital Storytelling: Capturing Lives, Creating Community* and Tom Banaszewski's (2002) article, *Digital Storytelling Finds it's Place in the Classroom*, education became aware of and excited about using digital storytelling in the classroom.

Individual definitions of digital storytelling have emerged over time, but a working definition is often used that describes digital storytelling as sharing a story through the use of multimedia such as digital images, music, video clips and voice narration (Armstrong, 2003). A digital story begins as a well-developed and closely scripted tale that is blended with images, digital audio and personal narrative and is usually saved in a QuickTime format for convenience. Stories can range from ones of personal experience, stories of learning, messages for social justice, or documentaries about historical events.

When I first began this literature review, my intent was to organize it around how digital storytelling was being used and researched in various content areas like literacy, science, math and social studies. As my review progressed, it became evident that using

content areas for an organizational structure was not appropriate for describing how digital storytelling was being used in education. Rather, the work in digital storytelling being described in the literature seemed to better fit into categories, or genres, that documented the educational purpose for which educators were using digital storytelling in their classrooms. Herein lies the natural development of genres within the more broad area of digital storytelling.

Digital Storytelling Genres

After a careful review of the literature it becomes evident that digital storytelling, the traditional personal story enhanced by images, narrative voice and music, has grown into several very distinct genres that still use Lambert's seven story elements that guided initial digital storytellers. Perhaps what we see in the literature is not a change in the functions and purposes of traditional storytelling, but rather an evolution of storytelling through the use of digital media. The functions of the "story" within digital storytelling may vary slightly because of the ability to share digital stories easily with a more global audience. Changes develop as we see storytelling being used for educational purposes. The resulting genres or types of digital stories that emerge from these efforts include traditional stories, learning stories, project-based stories, social justice and cultural stories, and stories grounded in reflective practice.

The genres blend across curriculum areas and grade levels ranging from elementary to higher education. Research on the impact of using digital storytelling in the classroom seems sparse, but several studies have emerged with some preliminary findings (Behmer, Schmidt, & Schmidt, 2006; Figg, Ward, & Lanier-Guillory, 2006). The following sections of

this article discuss the literature within each distinct genre and explore the individual characteristics and benefits for using this type of digital storytelling in the classroom.

Traditional digital stories

Traditional digital storytelling in the classroom can be described as stories that connect students with personal events or stories from life experience. The development and construction of traditional digital stories in the classroom follows the framework prescribed by Lambert and the Center for Digital Storytelling. Research in actual student learning outcomes is still lacking in this area but several studies documenting the use of traditional digital storytelling show promise for impacting student understanding and use of digital media. Traditional digital stories are most true to Lambert's (2006) seven elements of story structure and design.

Kadger (2004) investigated using traditional digital storytelling within language arts classrooms at the high school level. Her studies follow the traditional framework for digital storytelling as she works with high school students guided by the end goal of helping them gain confidence and a new understanding of literacy. Her findings suggest that students are more engaged in reading because they were conceptualizing, storyboarding, writing and producing their own personal stories. Other studies examining the use of traditional digital storytelling in classrooms have reported similar findings as students are challenged to think and write about people, events and individual life experiences. These traditional digital storytelling writing opportunities keep the students engaged as they collaborate with others along the editing and rewriting process (Kadger, 2004; Michalski, Hodges, & Bannister, 2005).

In research targeting urban middle school youth enrolled in an After-School program, Davis (2004) documented the storytelling process in a project that involved the creation of traditional digital stories focused on true events surrounding change in the life of the young people participating in the study. Through documentation of the storytelling process, Davis (2004) identified narrative as taking on an interactive process as students rehearse and define their final products. The traditional digital story rehearsal and construction process supports student learning and was found to be an important tool for the improvement of student writing, language and literacy skills (Davis, 2004; Kadjer, 2004; Michalski, Hodges, & Banister, 2005). The research and production of traditional digital stories provide youth with a clearer understanding of how life events shape who they are, and the final products become tools of learning for the authors themselves (Davis, 2004, Michalski, Hodges, & Banister, 2005). These findings suggest that traditional digital stories serve as a medium of empowerment, challenging students to think about their own lives in respect to the larger social and historical picture. In doing so they gain valuable writing, language arts and literacy skills for the future (Davis, 2004; Kadjer, 2004; Michalski, Hodges, & Banister, 2005; Weis, Benmayor, O'Leary & Eynon, 2002).

Digital stories of learning

Classrooms were once filled with students reading encyclopedia entries and writing reports on historical events or far away places. Today's classrooms find students actively using online resources for research and educators looking for ways to use contemporary technologies to engage the learner. Digital storytelling focused on stories of learning becomes a tool for students that enables them to synthesize what they research, and then tell their stories of learning by using digital images, audio, and narrative. As traditional digital

stories are implemented in the classrooms, many teachers see new opportunities for using a digital story format to frame stories that document learning. When digital stories are used in the classroom for learning stories, the focus shifts from the personal to the process. The end result is a story of an individual's learning. The product actually makes learning visible. In addition, stories of learning told with digital media promote student creativity and have been shown to increase student engagement as well as promoting collaboration during the planning and writing process (Friedus & Hlubinka, 2002; Tally & Goldenberg, 2005).

Working with students in the social studies classroom, Hofer and Swan (2005, 2006) reported that digital stories connect powerful learning tools with core content and support constructivist pedagogical practice in the classroom. Over a three year period, Hofer and Swan (2005) investigated using digital learning stories with students from fifth grade to graduate school and identified common themes that inform the use of digital storytelling within the context of learning stories. A learning digital story as defined by Hofer and Swan (2005) is "an open-ended, divergent means for students to share their understanding of course content" (p. 680). Other studies have shifted the focus from student learning to classroom teachers and their role in using digital storytelling as a learning tool.

In a study focused on interviews with twenty classroom teachers and digital storytelling instructors or workshop leaders, Banaszewski (2005) examined a variety of approaches to teaching with digital storytelling in the classroom. Within the genre of digital stories of learning his findings suggest that it is important to consider developmentally appropriate practice when planning for and utilizing digital video as part of students' tools for synthesizing and demonstrating learning. Banaszewski (2005) also emphasized the vital importance of context as students create stories and construct digital learning stories in the

classroom. An important finding in this case is that digital stories of learning empower students to be better and more effective communicators of their ideas and their learning.

Examples of digital storytelling as learning stories can be found across the content areas as well as within teacher education classrooms. Students in middle and high school social studies classrooms documented using digitized primary sources to assist them in recreating historical events and foster historical thinking (Tally & Goldberg, 2005). As students in pre-algebra classrooms use digital images to make story problems visible, they use story to make abstract math concepts become more concrete (Sharp, Garafolo, & Thompson, 2004). When digital media is used as a format for telling stories of learning images become, not only a part of a story, but an object to think with (Harel & Papert, 1991). Digital learning stories, whether shown in movie format or as still images with text, give students a way to show and share their learning in a visible manner (Bull & Bell, 2005; Hofer & Swan, 2005; Sharp, Garafolo, & Thompson, 2004). Based upon the findings of these studies, one thing is certain, many educators have used digital storytelling to address content and pedagogical knowledge related to specific learning tasks. As the genre of learning stories continues to evolve, the research on the use of digital storytelling in the classroom has given way to another area that changes its scope and focus from a learning story to using it as a tool within a project-based curriculum.

Digital stories of project-based learning

Searson (2005) makes several connections to digital storytelling as a culminating project within project-based learning and uses the goals for digital storytelling and project-based learning interchangeably. Both project-based learning and digital storytelling adventures call for complex learning environments that focus on meaningful engagement

with real-life problems (Searson, 2005). As a genre, project-based digital stories or digital storytelling as part of a project-based curriculum seems to have taken hold in the classroom and is showing success in measuring student learning outcomes.

In this case, digital storytelling becomes a tool that students use to grapple with real life situations and problems while collaborating with peers and adults to tell their stories. Technology is integrated throughout each stage of the project from topic selection, research, collaboration, construction and performance of the digital story (Searson, 2005). Boss and Krauss (2007) described the journey learners take as one from identifying and following their own questions as they create their own answers and meaning. Initial goals may look very familiar to other digital storytelling genres, but it is the experience as a whole, the pedagogical approach and connection with real world, authentic problems that define this specific genre and make it different from the others. Several studies have focused on the implementation of digital storytelling as part of a project-based learning environment and their findings compliment the benefits of using project-based learning and digital storytelling throughout the curriculum (Figg, Ward, & Guillory, 2006; Hathorn, 2005).

Hathorn (2005) described working with urban youth from elementary through high school age during an after school program called DUSTY, the Digital Underground Storytelling for Youth project. The purpose of this project is to provide guidance and resources for students to construct digital stories that will allow them to create a self-narrative. The goals behind project DUSTY are not only to develop stronger literacy skills but also to engage the learners as authors of digital stories that help students connect with their own communities. Student-authored digital stories based on real life experiences support positive self-image and serve as a catalyst to end destructive behavior (Hathorn,

2005). Participants used their own neighborhood stories and life experiences in order to provide a meaningful context for the project-based digital stories and the writing and construction of their stories gave students another view of themselves and their community.

Within the math curriculum digital images are being used as a piece of a project-based curriculum. Learners use digital images to provide the real world connection while making story problems or word problems visible, and therefore, more concrete for the learner (Sharp, Garafolo, & Thompson, 2004). The use of digital images and narrative promotes problem-solving skills and enables students to visualize mathematical problems that might otherwise be too abstract. Sharp, Garafolo, and Thompson (2004) examined the use of authentic digital images as representations of objects that enable students to connect real world issues with more abstract mathematical concepts. Stories are told using digital images, but in this case do not always end in a final video format as with other studies involving project-based digital storytelling. However, the result is just as informative about the process as in other studies.

The same findings have been noted in work within the middle and high school social studies classrooms and chronicle students using primary source documents. Primary source documents are used in the classroom as students synthesize historical information and make connections between historical research and real world experiences that will encourage students to construct digital stories from a variety of perspectives (Figg, Ward, & Guillory, 2006). Figg, Ward, and Guillory (2006) determined that digital storytelling when used as a tool within a project-based curriculum could enable learners to make authentic, real world connections with events of the past as well as with members of their own class through their stories. As learners research and identify problems within their lives and communities, the

outcome often blends into stories of another genre, that of stories of social justice and culture. The next section of this article will focus on digital stories that focus on issues of social justice and culture.

Digital stories of social justice and culture

Digital stories that stress social justice topics, community development topics or explore issues relating to culture are becoming a popular genre within digital storytelling in education. As learners become masters of media through the development of digital stories, they reclaim personal viewpoints and messages that can be articulated to a larger audience (Lambert, 2006; Meadows, 2003). Digital stories that explore cultural and social justice topics closely resemble the function of traditional stories (i.e. saving and passing along stories of a generation), but they remain focused on topics related to community, culture and social justice issues.

Daniel Meadows is credited with beginning the documentary photography movement in Britain during the 1970s. More recently his research has focused on the “active relationships we all have with the photographs we own, which represent us and in which our stories are contained” (Meadows, 2008, ¶ 7). Meadows developed the Capture Wales program in collaboration with a team from the British Broadcast Company (BBC), and his own experiences with The Center for Digital Storytelling. Capture Wales is an award-winning program developed in partnership with the BBC in Wales. It sets out to explore the stories of its people and their communities with a focus on digital equity (Meadows, 2008, ¶ 3). Meadow’s work with the Capture Wales program demonstrates how the digital storytelling process gives voice to people regardless of social stature or class. Digital stories

are commonly used as a medium for community groups and marginalized individuals to communicate their message or explore their own stories.

For example, the Communities @One program, a project that developed from the early work of the Capture Wales program connects communities of need within Wales with technology and the education to help them utilize it for their own needs (Communities @One, 2008). This program allowed members of the Aberystwyth Social Club to complete a project where individuals suffering with mental health issues were taught about digital storytelling. Then, they used technology to create stories of current club activities. The digital story construction project also served as a beneficial self-esteem building exercise for the members of the Aberystwyth Social Club.

Beeson and Miskelly (2005) explored approaches to using digital storytelling within community groups that allow for multiple narrative threads or voices within the story. These researchers focused on whether digital stories can have a unifying and mobilizing affect on small communities and community groups (Beeson & Miskelly, 2005). These two researchers explored whether or not “a community, through imaginative work, can frame a story of itself which will reflect and sustain its own properties in the world” (p. 1). Working collaboratively, these participants began telling stories of an entire community rather than focusing on an individual perspective. Beeson and Miskelly found that community stories are by their very nature unfinished, given that communities are living entities and their stories ever changing and evolving. Interesting findings regarding development of more autonomous roles by the community group members were also documented as they created the digital stories. The research also identified the tendency for the story itself to become the main

element within the digital projects rather than any of the group members or any particular character in the story.

Finally, important stories of community and social justice are beginning to be told by students in K-12 classrooms. Elementary and middle school students reported being empowered by digital storytelling. Behmer, Schmidt, and Schmidt (2006) conducted a study that followed the process of digital storytelling with seventh grade students who were researching human rights issues. This digital storytelling experience motivated young learners to tell compelling stories about human rights issues to others. Whether digital storytelling experiences build community or serve as a means for expressing themes of social justice or cultural heritage, digital storytelling often empowers those that immerse themselves in the process while creating their stories (Hlubinka, 2003; Lambert, 2006; Meadows, 2003; Paull, 2002). Results from this study reported that students became so engaged with the story and the process that the work took over and peer mentoring solved any technological issues. This deep engagement with the topic motivated students to actively search for more information about their topic which included interviewing a community member. Students took more responsibility for their projects because it was an authentic learning task that would conclude with presenting their digital stories to the community members who participated. Through involvement with their own community stories, learners begin to reflect on their life experiences and the stories that develop from those reflections are documented in the literature as another distinct genre that focus on stories of personal reflection.

Digital stories of personal reflection

Digital storytelling as a tool for reflective practice is most commonly examined in teacher education classrooms (Barrett, 2006; Hall & Hudson, 2006; Kim, 2006; Tendero, 2006). By using digital storytelling as a tool for reflective practice learners can evaluate their experiences and make adjustments or alterations in practice before moving forward in the learning process. Tendero (2006) reinforced the idea when he stated, “Digital storytelling effectively facilitates efforts to capture classroom moments for pre-service teachers to reflect upon and revise practice, as well as develop a teaching consciousness” (p. 175).

Reflective practice helps facilitate professional development among learners in higher education. Taking this one effective step further, reflective digital storytelling is a helpful tool that enables learners to document their professional growth and skill development (Barrett, 2006). As a leader in the field of reflective practice and electronic portfolios, Helen Barrett (2006) has proposed using the digital story as a tool for reflection within the electronic portfolio process. This provides teacher education students with opportunities to reflect on their own learning and growth over time by constructing digital stories. Drake, Spillane, and Hufferd-Ackles (2001) highlighted the development of reflective stories as a lens through which teachers can view their practice and begin to know themselves and their lives. Using digital storytelling as a tool for reflective practice provides pre-service teachers with the opportunity to engage in the same sort of reflective storytelling using digital tools as the mode of communication (Robin & Pearson, 2005).

Research in pre-service teacher education classrooms, ranging from special education, early childhood education, English for second language learners and English education, reveals that digital storytelling projects of personal reflection are being used as

learning tools for pre-service teachers. The research necessary to complete the digital storytelling process motivates pre-service teachers towards a deeper understanding of complex academic content and concepts and provides a catalyst for change in practice (Dupain & Maquire, 2005). The construction of reflective digital stories encourages the use of higher-order thinking skills such as analysis and synthesis across disciplines and content areas as pre-service teachers struggle to make sense of the information they compile for their stories (Barrett, 2006; Hall & Hudson, 2006; Kim, 2006). Digital stories have shown promise as more than an isolated reflective task, they have been examined as a tool within the process of developing a learning portfolio for some pre-service teachers.

Lathem, Reyes, and Qi (2006) examined how pre-service teachers used digital stories of personal reflection as a piece of the electronic portfolio process. According to these researchers, “Multimedia technology today provides students with new tools to create reflections that mirror the process of metacognition” (p. 701). As pre-service teachers tell learning stories from their experiences in the classroom and then reflect upon and create those stories digitally, they are actually able to rethink their teaching and make much needed connections with learning theory and the content from their methods courses (Hall & Hudson, 2006; Kim, 2006; Lathem et al., 2006; Tendero, 2006; Ugoretz, 2006). Tendero (2006) stated, “Digital storytelling is emerging as a way to shape narrative” (p. 174). With such powerful potential, some teacher educators are beginning to look seriously at using digital storytelling as a reflective tool to help pre-service teachers become reflective practitioners. It appears that digital storytelling is finding a place in education through the development of distinct genres, each with its own characteristics, and shows promise as a

learning tool that effectively integrates technology into the curriculum. However, there is still much that can be done to research and document the use of digital storytelling in classrooms.

Recommendations for Future Research

Emergent genres in the research literature surrounding the use of digital storytelling in classrooms point to some very clear implications for future research. Schrum et al. (2005) outlined a standard for research in educational technology that calls for research that examines student learning outcomes and teacher beliefs and practice in a manner that connects directly to classroom experiences in schools. Hence, opportunities exist for research studies that examine K-12 student learning as a result of using digital storytelling across the five genres proposed in this article. Future research investigating student-learning outcomes when using digital storytelling as a way of synthesizing and presenting information in specific content areas will advance our understanding of using such a process with K-12 students. Whether digital storytelling is used as a means for telling stories of learning, a component of a project-based learning environment, or a medium for telling stories of social justice and culture, examining and reporting the impact of using such an approach with K-12 students may capture evidence of student learning that standardized tests might be missing (Schrum et al., 2005).

Specifically, digital stories of personal reflection provide the field with a medium with which to examine teacher beliefs connecting technology with teacher practice. Inservice and pre-service teachers can use digital storytelling as a reflective tool, while examining their own definitions about educational technology as well as identifying appropriate uses of technology in classrooms. In fact, each digital storytelling genre gives researchers

opportunity to look more closely at how using digital storytelling in the classroom helps professionals make connections between their beliefs and practices. By examining how teachers visualize their own learning and express it through digital stories of personal reflection, researchers can begin to understand how teacher beliefs affect and impact their practice in the classroom (Banaszewski, 2005; Tendero, 2006).

Conclusion

Digital storytelling has found a place in education through the development of distinct genres. Each genre is defined by unique characteristics and digital storytelling shows promise as a learning tool that supports technology integration. Whereas teachers past the fourth grade have not always embraced storytelling in the traditional form, digital storytelling is being integrated and adapted to fit the needs of teachers, learners across the curriculum (Banaszewski, 2005). As genres continue to develop within digital storytelling, it is important that we, as educators, not lose site of the function and purposes of storytelling. As Baldwin (2005) stated, “Something is happening in the power and practice of story: In the midst of overwhelming noise and distraction, the voice of story is calling us to remember our true selves” (p. xii). The challenge presented to educators is how to harness the power of storytelling using digital media tools that empower, engage and motivate our students.

This review of literature identifies several powerful research findings surrounding digital storytelling and its use in the classroom. Regardless of genre, digital storytelling has been shown to increase student motivation and engagement (Friedus & Hlubinka, 2002; Kadjer, 2004; Michalski, Hodges, & Bannister, 2005). As learners grapple with storytelling and digital media in order to tell personal stories, stories of learning or solve real world

problems the research describes motivated learners across the curriculum. Then, when learners connect with curriculum in new and often more personal ways, the research identifies increased levels of empowerment as they construct and produce their digital stories, often for a larger audience (Davis, 2004; Hathorn, 2005; Kadjer, 2004; Meadows, 2003; Behmer, Schmidt, & Schmidt, 2006). Furthermore, during the digital storytelling process learners of all ages work collaboratively to fine-tune the narrative within their stories, which provides opportunities for revision and editing before the final project. This collaborative learning model used in classrooms and documented within the research is identified as an instructional approach that helps students make sense of their own learning (Davis, 2004; Friedus & Hlubinka, 2002; Kadjer, 2004; Michalski, Hodges, & Banister, 2005).

The limited research into using digital storytelling in classrooms has revealed that as an application as well as a pedagogical approach, storytelling with digital media incorporates many of the cultural and social functions of traditional storytelling. Functioning as a tool for learning, digital storytelling adds new dimension to the purpose of traditional storytelling as it acclimates itself to the classroom. As research in this area matures, new genres may emerge as educators design digital storytelling projects to meet the needs of their students and curriculum.

References

- Armstrong, S. (Ed). (2003). *Snapshots! Educational insights from the Thornburg Center*.
Lake Barrington, Illinois: The Thornburg Center.
- Baldwin, C. (2005). *Storycatcher*. Novato, CA: New World Library.
- Banaszewski, T. (2002). *Digital storytelling finds its place in the classroom*. Retrieved May 25, 2007, from <http://www.infotoday.com/MMSchools/jan02/banaszewski.htm>
- Banaszewski, T. (2005). *Digital storytelling: Supporting digital literacy in grades 4-12*.
Master's thesis, Georgia Institute of Technology. Retrieved on April 20, 2007, from
http://techszewski.blogs.com/techszewski/files/TBanaszewski_DS_thesis.pdf
- Barrett, H. (2006). Researching and evaluating digital storytelling as a deep learning tool. In
C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and
Teacher Education International Conference 2006*, (pp. 647–654). Chesapeake, VA:
AACE.
- Basso, K. (1996). *Wisdom sits in places: Landscape and language among the Western
Apache*. Albuquerque: University of New Mexico Press.
- Beeson, I., & Miskelly, C. (2005). Digital stories of community: Mobilization, coherence and
continuity. *Media in Transition Conference, Massachusetts Institute of Technology*.
Retrieved on April 2, 2007, from
http://www.uwex.edu/disted/conference/Resource_library/proceedings/05_2012.pdf
- Behmer, S., Schmidt, D., & Schmidt, J. (2006). Everyone has a story to tell: Examining
digital storytelling in the classroom. In C. Crawford et al. (Eds.), *Proceedings of
Society for Information Technology and Teacher Education International Conference
2006*, (pp. 655–662). Chesapeake, VA: AACE.

- Boss, S., & Krauss, J. (2007). *Reinventing project-based learning: Your field guide to real-world projects in the digital age*. Eugene, OR: International Society for Technology in Education.
- Bruner, J. (1986). *Actual minds, possible worlds*. Cambridge, MA: Harvard University Press.
- Bull, G., & Bell, L. (2005). *Teaching with digital images*. Eugene, OR: International Society for Technology in Education.
- Collins, R., & Cooper, P. (1997). *The power of story: Teaching through storytelling*. (2nd ed.). Scottsdale, AZ: Gorsuch Scarisbrick Publishers.
- Communities @One. (2008). *Communities @One helps people use technology in the communities that need it most in Wales*. Retrieved on April 21, 2008, from <http://www.communitiesatone.org/>
- Davidson, H., & Porter, B. (2005). *The art of digital storytelling*. Retrieved on May 27, 2007, from <http://www.digitales.us/resources/books.php>
- Davis, A. (2004). Co-authoring identity: Digital storytelling in an urban middle school. *Then Journal*. Retrieved online on May 23, 2008, from <http://thenjournal.org/feature/61/>
- Dewey, J. (1944). *Democracy and education: An introduction to the philosophy of education*. New York: The Macmillan Company.
- Drake, C., Spillane, J., & Hufferd-Ackles, K. (2001). Storied identities: Teacher learning and subject matter context. *Journal of Curriculum Studies*, 33(1), 1–23.
- Dupain, M., & Maquire, L. (2005). Digital storybook projects 101: How to create and implement digital storytelling into your curriculum. *21st Annual Conference on Distance Teaching and Learning*. The Board of Regents of the University of

- Wisconsin System. Retrieved on April 2, 2007, from
http://www.uwex.edu/disted/conference/Resource_library/proceedings/05_2012.pdf.
- Dyson, A. H., & Genishi, C. (1994). *The need for story: Cultural diversity in classroom and community*. Urbana, IL: National Council of Teachers of English.
- Figg, C., Ward, R., & Lanier-Guillory, D. (2006). Using social studies content themes and digital storytelling to make video come alive. In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2006*, (pp. 679–684). Chesapeake, VA: AACE.
- Friedus, N., & Hlubinka, M. (2002). Digital storytelling as reflective practice in communities of learners. *ACM SIGGROUP Bulletin*, 23(2), 24–26.
- Hathorn, P. (2005). Using digital storytelling as a literacy tool for the inner city middle school youth. *The Charter Schools Resource Journal*, 1(1), 32–38.
- Hall, L., & Hudson, R. (2006). Cross-curricular connections: Video production in a K-8 teacher preparation program. *Contemporary Issues in Technology and Teacher Education* [Online Serial], 6(3). Retrieved from
<http://www.citejournal.org/vol6/iss3/currentpractice/article1.cfm>
- Hlubinka, M. (2003). *Behind the screens: Digital storytelling as a tool for reflective practice*. Masters thesis, Massachusetts Institute of Technology. Retrieved on March 10, 2006, from <http://ilk.media.mit.edu/papers/hlubinka-ms.pdf>
- Hofer, M., & Swan, K. (2005). Digital moviemaking: The harmonization of technology, pedagogy and content. *International Journal of Technology in Teaching and Learning*, 1(2), 102–110.
- Hofer, M., & Swan, K. (2006). Digital storytelling: Moving from promise to practice.

- In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2006*, (pp. 679–684). Chesapeake, VA: AACE.
- Kadger, S. (2004). Enter here: Personal narrative and digital storytelling. *English Journal*, 93(4), 64–68.
- Kim, H. (2006). How do we change pre-service teachers' perceptions of scientists using digital storytelling? In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2006*, (pp. 689–691). Chesapeake, VA: AACE.
- Lathem, S., Reyes, C., & Qi, J. (2006). Literacy autobiography: Digital storytelling to capture student voice and reflection. In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2006*, (pp. 700–704). Chesapeake, VA: AACE.
- Lambert, J. (2002). *Digital storytelling: Capturing lives, creating community*. Berkeley, CA: Digital Diner Press.
- Lambert, J. (2006). *Digital storytelling: Capturing lives, creating community*. Berkeley, CA: Digital Diner Press.
- Macquire, J. (1998). *The power of personal storytelling: Spinning tales to connect with others*. New York: Putnam.
- Meadows, D. (2003). Digital storytelling: Research-based practice in new media. *Visual Communication*, 2(2), 189–193.

- Meadows, D. (2008). *Photobus: An adventure in documentary photography*. Retrieved on April 10, 2008, from http://www.photobus.co.uk/index.php?id=6&gallery=the_bus.flv
- Michalski, P., Hodges, D., & Banister, S. (2005). Digital storytelling in the middle childhood special education classroom: A teacher's story of adaptations. *Teaching Exceptional Children Plus*, 1(4). Retrieved on March 26, 2007, from <http://escholarship.bc.edu/education/tecplus/vol1/iss4/art3/>
- Harel, I., & Papert, S. (1991). *Constructionism*. Norwood, NJ: Ablex Publishing.
- Patterson, M. (1999). *Storytelling: The art form of painting pictures with your tongue*. Retrieved May 25, 2007, from <http://www.hollowtop.com/storytelling.htm>
- Paull, C. (2003). Self-perceptions and social connections: Empowerment through digital storytelling in adult education. *Doctoral dissertation, University of California: Berkeley*.
- Robin, B., & Pierson, M. (2005). A multilevel approach to using digital storytelling in the classroom. In C. Crawford et al. (Eds). *Proceedings of Society for Information Technology and Teacher Education International Conference 2005*, (pp. 655–662). Chesapeake, VA: AACE.
- Sawyer, R. (1990). *The way of the storyteller*. New Zealand: Penguin Books.
- Schank, R. (1990). *Tell me a story: A new look at real and artificial memory*. New York: Charles Scribner & Sons.
- Searson, M. (2005). Digital stories about and from PBL. In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2005*, (pp. 2013–2015). Chesapeake, VA: AACE.

- Schrum, L., Thompson, A., Sprague, D., Maddux, C., Mc Anear, A., & Bull, G. (2005). Advancing the field: Considering acceptable evidence in educational technology research. *Contemporary Issues in Technology and Teacher Education* [Online Serial], 5(3/4). Retrieved from <http://www.citejournal.org/vol5/iss3/editorial/article1.cfm>
- Sharp, B., Garafolo, J., & Thompson, A. (2004). Digital images in the mathematics classroom. *Learning and Leading with Technology*, 31(8), 30–32.
- Standley, M. (2003). *Digital storytelling: Using new technology and the power of stories to help our students learn and teach*. Retrieved on May 23, 2007, from http://mstandley.com/digital_storytelling.pdf
- Tally, B. & Goldenberg, L. B. (2005). Fostering historical thinking with digitized primary sources. *Journal of Research on Technology in Education*, 38(1), 1–21.
- Tendero, A. (2006). Facing versions of the self: The effects of digital storytelling on English education. *Contemporary Issues in Technology and Teacher Education* [Online Serial], 6(2). Retrieved from <http://www.citejournal.org/vol6/iss2/languagearts/article2.cfm>
- Ugoretz, J. (2006). Making meaning from meaning making: Digital stories in teacher education and the liberal arts. In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2006*, (pp. 737–741). Chesapeake, VA: AACE.
- Weis, T., Benmayor, R., O’Leary, C., & Eynon, B. (2002). Digital technologies and pedagogies. *Social Justice*, 29(4), 153–167.

CHAPTER 3. NARRATIVE INQUIRY: A METHODOLOGY FOR EXAMINING REFLECTION IN PRE-SERVICE TEACHERS' DIGITAL STORIES

Paper to be submitted to *Qualitative Studies in Education*

Cynthia M. Garrety

Abstract

This article describes how the use of narrative inquiry as a research methodology can be used to examine how digital storytelling can be used as a tool for reflective practice in teacher education. This article focuses on demystifying the process of narrative inquiry by using examples from my own work with pre-service teachers using digital storytelling as a tool for reflection. Detailed discussion for each step of the data analysis is explored and specific examples for each step are given.

“Stories also provide students with opportunities to notice and connect with contexts or environments and, through listening to stories, begin to make sense of practice realities and the relationships between current and past experience.” McDrury and Alterio, 2002

Narrative Beginnings

My first day as a teacher, many years ago, echoed the experiences of so many new teachers who enter their first classroom full of enthusiasm and armed with a toolkit of knowledge from their undergraduate coursework and experiences. I had taken a position in a Head Start classroom, and although I had worked during my practicum with Head Start, I was not prepared for the deluge of real life drama that would impact each day of my teaching. Over the next sixteen years, I found myself questioning what could have been done differently during my teacher preparation coursework that might have better prepared me for the realities of classroom teaching.

Perhaps, I thought, teaching was just one of those professions that you needed to experience in order to truly understand. When I made the decision to return to college and study technology and teacher education, the interest in teacher preparation was rekindled and I began to examine how college students become teachers and how we, as higher education professionals, prepare them for a teaching career.

The purpose of this article is to describe how to use ethnography and narrative inquiry as methodologies for analyzing the narratives of pre-service teachers as they create digital stories that reflect on a semester of learning in a K-3 literacy methods course. First, the article will define digital storytelling as the phenomenon being studied, and then examine ethnography and narrative inquiry as the methodological approaches used for understanding

the use of digital storytelling as a tool for reflective practice. Next, the article will carefully explore the steps involved in conducting the data analysis within narrative inquiry. Each step of the data analysis will be explained using examples from a study that was specifically designed to understand the use of digital storytelling as a tool for reflection among pre-service teachers as they moved along a developmental continuum of reflective practice. For the purposes of this article, the pre-service teachers' narratives and stories are used to illustrate the weaving together of a bricolage of experiences that chronicled their journey from being a student to becoming a teacher. Thus, this article explains the narrative inquiry process in detail using concrete examples to assist other researchers who might be interested in using narrative inquiry as a possible research methodology.

During the most challenging moments in my teaching career I found that stories became my anchor, and sharing those stories with other teachers helped me reflect, grow and develop as a professional. Some stories simply sat with me, tales from the tattered home life of a child or narratives that followed the struggles of a family. Others grew as learning stories and shaped how I saw and understood children and their experiences. Storytelling not only shows us what we have learned, but also gives us a voice to our experiences and helps us make meaning of our lives (Lambert, 2002; Schank, 1990). The stories that we choose to tell, whether by voice, text or with the use of digital media, invite responses from our listeners (Lambert, 2002; Schank, 1990). Stories become a vivid and informative way to share our experiences and represent our knowledge. The myriad of experiences that make up our lives as teachers become a map detailing who we are as professionals and the journey we have taken to get there. Schank (1990) described knowledge, as “experiences and stories, and intelligence is the apt use of experience and the creation and telling of stories” (Schank,

1990, p. 16). Finding a way to use the stories that make up who we are as teachers turns a memory into knowledge that can help us grow and learn as professionals.

Digital media provides the tools for today's teachers to tell and examine not only their own teaching stories, but also the stories of other teachers at all stages of their teaching careers. As digital media has become more accessible, the connection has grown between telling stories and showing those same stories to a larger audience through the use of digital technology (Armstrong, 2003; Lambert, 2002). A large part of the digital piece of storytelling lies with the inclusion of images, both scanned and taken with digital cameras. As teachers use images and story in combination to examine and research their teaching the power of the photographs becomes evident. Connelly and Clandinin (2000) discussed using images for research data within a narrative inquiry approach as they explain, "each photograph marks a special memory in our time, a memory around which we construct stories" (p. 114).

This article begins by examining reflective practice and the use of storytelling as reflection. Bruner (1986) described storytelling as having the potential to recreate experiences in order to understand the self. Through the use of the tools of the digital age, learners are using images, narration and audio to create digital stories that enable them to reflect on their own narratives of experience. The study that forms the foundation of this article examined digital storytelling as a tool for reflective practice among pre-service teachers as they begin to develop the skills that supported their growth as reflective practitioners. To set the stage for the study, the literature surrounding reflective practice and storytelling is discussed and the connection is made between using digital storytelling as a reflective tool for students of the digital age. Next, the theoretical framework for the study is discussed and the methodological approach is grounded in social constructivism and

interpretive methodologies. Ethnography and narrative inquiry are examined as the methodological approaches that were used to examine and analyze pre-service teacher narratives and reflective digital stories. The article concludes with a detailed description of the narrative inquiry process of data analysis with specific examples from my work with pre-service teachers as they used digital storytelling as a tool to support their development as reflective practitioners.

Storytelling as Reflective Practice

Busy teachers, often without conscious thought, take pause at the end of the day to reflect upon the experiences that occurred in their classrooms. This reflection may often leave them wondering how an idea or technique found its way into their practice or why they reacted to a situation in a particular way (McDrury & Alterio, 2002; Zembylas, 2005). Memories impact teaching strategies, and new memories add to the development of teaching techniques during undergraduate pre-service teacher education and throughout the early experiences in the classroom. McDrury and Alterio (2002) described the connections made between life experiences and learning opportunities and how those experiences can work together to provide opportunities that allow educators to reflect upon those experiences and make connections between theory and practice. The connections that pre-service teachers make between life experiences and current practice are often formed and told as stories (Ferdig, 2004; Li, 2005). Storytelling as reflection is a meta-cognitive practice that allows our minds to cognitively connect our prior knowledge with new experiences through language (Bruner, 1986).

McDrury and Alterio (2002) addressed the importance of telling stories for pre-service teachers in their book, *Learning Through Storytelling in Higher Education*.

According to these authors, “Stories also provide students with opportunities to notice and connect with contexts or environments and, through listening to stories, begin to make sense of practice realities, and the relationships between past and current experience” (p. 85). Their learning through storytelling framework can be paired with Rodger’s processes for reflective learning which gives a clear picture of the reflective process pre-service teachers take as they tell and create stories from their experiences in the field (See Table 1). Shared stories of practice and experience invite students to learn from each other and learn from professionals in the field within the social context of the education. Learners that are paired with more competent peers or adults can learn with the assistance or modeling of more advanced learners until they can function at a higher level without assistance (Trueba, 1999; Vygotsky, 1989).

When one examines Dewey’s stages of reflective learning in comparison with McDrury and Alterio’s (2002) stages of learning through storytelling we begin to see similarities between both. As pre-service teachers go about finding the stories they want to tell, writing the story and expanding on it through peer collaboration they mimic the steps that Rodgers (2002) identifies within Dewey’s work with reflection. By focusing on story development as a function of reflective practice, pre-service teachers can be supported as they develop the skills necessary for professional reflection that will lead to changes in practice through the integration of new knowledge and information.

Table 1. Parallels Between Reflective Learning and Learning Through Storytelling

| Dewey's stages of reflective learning (Rodgers, 2002) | Learning through storytelling (McDrury & Alterio, 2002) |
|--|--|
| An experience | Story finding |
| Spontaneous interpretation | Storytelling |
| Naming the problem, questioning | Story expanding |
| Possible explanations | Story processing |
| Hypothesis and experimentation | Story reconstructing leading to change in practice |

As students hear meaningful reflective stories from teachers in the field and from his/her fellow students, they make more relevant connections between theory and practice (McDrury & Alterio, 2002). The authors also point to the power of storytelling and reflection for pre-service teachers as a way of knowing, “Storytelling has the capacity to uncover, discover, freeze, create or re-image meaning and to enable articulation of subsequent learning” (p. 35). By encouraging pre-service teachers to reflect upon their experiences in the practicum classroom and within their university courses, teacher educators can enable them to construct meaning and explore the skills and knowledge that make up learning to teach. To understand learning as a cognitive experience that is interwoven with our social experiences, we look to interpretive research methodology and listen to the stories of our research participants.

Digital Storytelling as a Tool for Reflective Practice

Digital images serve as memory markers from our life experiences. As memory markers, digital images add depth and interest to the stories that humans tell in order to make sense of the experiences in their lives. Individuals involved in digital storytelling look at the personal computer as a sort of memory box, where our individual and community stories can be constructed, edited and stored for generations to come (Lambert, 2002). Teachers, through

the inclusion of their teaching stories and digital images, can construct their own memory boxes that chronicle their growth as teachers.

The use of digital images, audio and narrative combined to tell cultural stories of personal growth and learning developed into the digital storytelling movement spearheaded by Joe Lambert, Nina Mullen and Dana Atchley in the late 1990s (Lambert, 2006). The availability of affordable access to digital media and computer technologies necessary to add another level to traditional storytelling brought digital storytelling process to the masses.

Digital storytelling builds upon the tradition of storytelling by adding digital media in the form of images, narration and music. Sara Armstrong (2003) described digital storytelling as the telling and sharing of stories through multimedia. Using the multimedia tools available today such as iMovie, MovieMaker and Final Cut Pro in combination with affordable digital cameras, digital video cameras, and scanners, means consumers and learners can look at the events of their lives in a much different way. What might have once been a narrative told at family gatherings now becomes a public performance with the addition of digital media.

Ethnography and Narrative Inquiry:

Methodologies for Understanding Pre-service Teacher Experiences

This article describes using two interpretive research methodologies to most effectively look at the culture of teacher education in a K-3 literacy methods course. In particular, it addresses the research methodology used to examine the impact of using digital storytelling as a tool for pre-service teachers to reflect on their experiences and to support their development as reflective practitioners. Ethnographic data in the form of field notes and observations were gathered to provide a rich, detailed picture of the content and culture that

made up the environment for the three pre-service teacher participants being studied. To more deeply listen to the stories and experiences of the three pre-service teachers studied, narrative inquiry methodology was used to provide a rigorous way to visit and revisit the pre-service teachers' narratives. In addition to reflective narratives, the pre-service teachers also crafted a reflective digital story. Narrative inquiry also provided the framework necessary to examine digital storytelling as a phenomenon within the experience of becoming a teacher. Learning to teach is a process made up of stories, some told digitally, and narrative inquiry provided an analysis process that allowed the stories to be viewed and understood from multiple perspectives. Understanding digital storytelling as a tool within the reflective process, from within the culture of the K-3 literacy methods classroom, helped the study uncover a story about the development of reflective practice among pre-service teachers. A narrative inquiry approach was also used when analyzing data that emerged in the form of collaborative blogs, coursework reflective assignments and papers, class discussions and practicum observations.

Interpretive methodology

Each pre-service teacher begins his or her education with a set of prior experiences and constructs their own reality through interaction with the social environment and cultural expectations. Personal stories and interpretations of reality are then socially constructed through interaction with the environment and through acts of interpretation on the part of the learner (Prasad, 2005). Looking at knowledge from a social constructivist theoretical perspective necessitates the belief that learning does not occur in isolation, but surrounded by the influence of the social experience from both past and present experiences. In this study, reflection was viewed as a collaborative process as well as an individual practice and the data

gathered shed light on both aspects of learning. An epistemological view that supports reality as socially constructed is necessary in order to research the practice of teacher reflection, looking in depth at how teacher practice has changed and has been affected by each student's experiences. Understanding how reflective practice affects the development of teacher beliefs and practices during a student's undergraduate studies may inform educators developing curriculum for teacher education programs. My own work, detailed in this article, took a slice of that experience as it examined three pre-service teachers during their K-3 literacy methods course and practicum classroom experience in a K-5 school.

Interpretive research methodology is grounded in the epistemological constructs of social constructivism. Within the interpretivist research tradition, reality is not only socially constructed, but multiple views of reality exist, and it is important for individual voices to be heard and listened to while rebuilding the story of a culture or society (Gerstl-Pepin, & Gunzenhauser, 2002; Reed-Danahay, 2002; Trueba, 1999). Interpretivist research takes place in the natural social setting of the group being studied. Knowledge is co-constructed as groups strive for understanding (Prasad, 2005). Ethnographic data are usually collected in the form of observations, journals, field notes, documents, visual materials and records of personal experiences. For the study described in this article, I examined participants' digital stories that were constructed at the end of the semester as a reflective activity looking back upon their learning experiences both in the university classroom and the K-5 practicum. I also analyzed their narratives and experiences throughout the semester through interviews and observational field notes. Their digital stories and narratives provided me with data that described their development as reflective practitioners. A process of narrative inquiry data

analysis was employed to thoroughly examine and better understand the pre-service teacher narratives and stories.

Narrative inquiry is an interpretivist research methodology that focuses on a phenomenon rather than a culture (Connelly & Clandinin, 2000). Like ethnography, narrative inquiry calls for long-term participatory involvement and relationship building; however, the focus of the research is directed towards the phenomenon and not the individuals themselves (Connelly & Clandinin, 1990). Individual narratives are used to reconstruct the phenomenon. In this case, the use of digital storytelling was used as a means of reflective practice within the teacher education culture. As shown in Figure 1, the design of the study flows as an interpretivist methodology, while utilizing ethnography and narrative inquiry to analyze a phenomenon within the culture of teacher education. The next section of this article discusses both ethnography and narrative inquiry in more depth and situates this study in both the culture of teacher education and the phenomenon of using digital storytelling as a form of reflective practice within that culture.

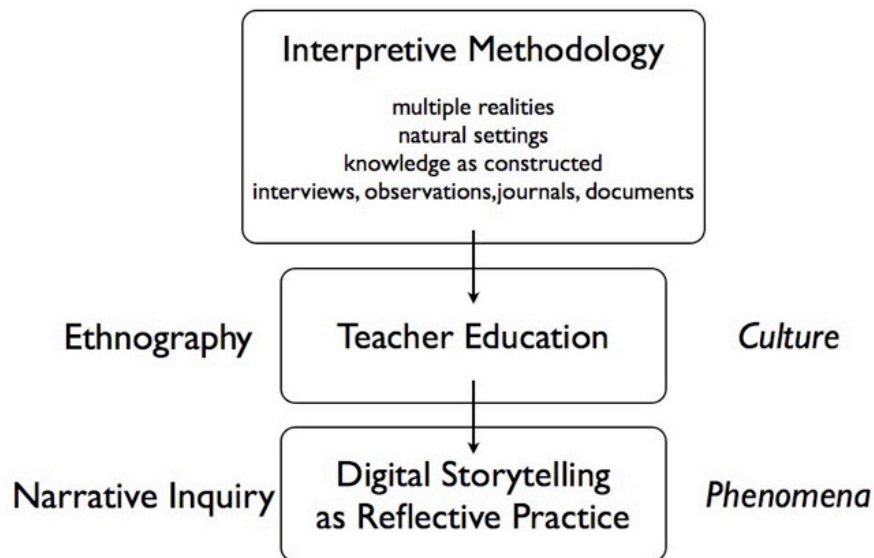


Figure 1. Interpretive methodology looking at culture and phenomenon

Ethnography is a methodological approach that places the researcher within a long-term relationship with a group of people and their culture for the purpose of developing a deeper sense of understanding (Reed-Danahay, 2002). Based on the fundamental belief that knowledge is socially constructed, the researcher observes the cultural and social behaviors that make up the group being studied and looks at how the behaviors, beliefs and traditions contribute to the formation of knowledge (Emerson, Fretz, & Shaw, 1995). The researcher looks at multiple perspectives within the group and uses the tapestry of voices and viewpoints to build a deeper understanding of the culture. The researcher's role is not only to observe the group that is being researched, but to become a part of the group as a participant-observer in order to make connections and understand the participants' stories in a more detailed and meaningful manner (Emerson, Fretz, & Shaw, 1995).

To more deeply understand a cultural group, such as a teacher education course in K-3 literacy methods, an ethnographer may focus on a smaller number of participants. This allows for the building of relationships that give the researcher more insight into the social realm of the participants. Eichorn (2001) defined a group as a community of people brought together by shared experiences such as a shared set of reading and writing practices. Other studies have looked at cultural groups, racial groups, socio-economic groups and familial groups using ethnographic methodology (Errante, 2000; Li, 2005; Marker, 2003; Trueba, 1999).

Denzin (1997) explained ethnography as a "form of inquiry and writing that produces descriptions and accounts about the ways of life of the writer and those written about" (p. xi). In ethnography, the researcher as participant observer brings his/her own context and experiences to the study. As a teacher, I bring the experiences gathered during my years in

the classroom, my theoretical background, as well as my graduate school experiences working with undergraduate pre-service teachers with me as I approach this work. My own perspectives will blend with my experiences and participation while I am working with the participants, which will enable me to grasp what is important and meaningful to them as they experience the literacy methods course as a piece of their pre-service teacher education program of study (Emerson, Fretz, & Shaw, 1995).

My role as a participant-observer in the teacher education program allows me to gather data that situates the study within its cultural context. Observational field notes were compiled during experiences in the literacy methods classroom as well as in the practicum classroom. The primary focus of these field notes was to capture observations of key figures and events, key experiences and initial feelings, and interpretations of the situation. Observational field notes also provided a detailed description of the physical environment, emotional feelings of the time and place, and mental images that helped recreate the scene once the fieldwork was completed and the analysis process was underway.

Narratives and stories are collected as a piece of data within ethnographic work but can most thoroughly be understood by using a methodology designed specifically for the analysis of narrative data. Narrative inquiry was used to pay particular attention to the narratives of the pre-service teachers in the study. The pre-service teacher narratives, including the digital story created to reflect on the course experience, were examined narratively through process that situated them within the social context of learning to teach (Connelly & Clandinin, 1990).

Narrative inquiry methodology

Connelly and Clandinin (2000) defined narrative inquiry as, “A process of learning to think narratively, to attend to lives narratively, and to position inquiries within a metaphorical three-dimensional space” (p. 120). This approach has been beneficial in educational studies that look at the experience of education. Bruner (1986) described the use of stories as a way that learners make sense of new experiences. As pre-service teachers tell stories of their experiences in teacher education they use them to reflect on new experiences. Storytelling becomes a tool for reflection on practice, which can form the basis for pre-service teachers to better understand new content being learned and integrate new knowledge and experiences into their growing understanding of teaching. The stories told by pre-service teachers often focus on reflection within the practice classroom settings (McDrury & Alterio, 2002). Clandinin, Pushor, and Orr (2007) described how “story, in the current idiom, is a portal through which a person enters the world and by which their experience of the world is interpreted and made personally meaningful” (p. 22). Narrative inquiry is a methodology that adopts the viewpoint that experiences become phenomenon to be studied. In this study, the use of digital storytelling by pre-service teachers for reflective practice becomes the phenomenon to be studied. The pre-service teacher narratives become the vehicle by which I listened to my participants and heard their stories of experience from multiple perspectives in order to more deeply understand the phenomenon, using digital storytelling as a tool for reflective practice in pre-service teacher education.

Connelly and Clandinin (1988) stressed that it is important to understand what people experience. My study examined the experiences of three pre-service teachers as they began their journey towards becoming a teacher. By reflecting on stories of teaching that explore

past assumptions and beliefs we can begin to understand the process of how a pre-service teacher prepares for and becomes a classroom teacher. Stories that focus on learning new skills, anxiety related to putting those learned skills into practice, and the complexity of balancing recently learned knowledge with the realities of the classroom make up many of the stories told by pre-service teachers (McDrury & Alterio, 2002). To understand teacher stories and the personal knowledge that each of the three participants brought to their journey of learning to teach, narrative inquiry was used to analyze and interpret the data that tell the tale of their learning adventure.

Dewey (1944) addressed the interaction between the personal and social realms, the past, present and future spaces in time, and the notion of place or situation in the social in his theory of experience. Connelly and Clandinin (2000) developed a research framework based on this foundation of examining experiences from multiple perspectives of human experience. The aim behind their framework was to situate the researcher within an experience while attending to three dimensions - temporality, personal and social, and place (Connelly & Clandinin, 2000). Within the temporal dimension the researcher experiences the activity or event by paying close attention to the past, the future and the present and how those entities affect the experience being observed. The personal and social dimension, directs the researcher to look inward with reflection while also experiencing the environment in which the activity takes place (Connelly & Clandinin, 2000). Place is the third dimension and refers to the concrete physical boundaries of the inquiry space. Within this framework the researcher can more fully experience the phenomenon being studied.

According to Dewey experience is a personal entity, which is always connected to the social experience (Dewey, 1944). Therefore, to understand an individual we must know more

about their place in the social realm or the context in which the experience occurred. As individuals tell the stories of their experiences and situate these experiences within a social context, we can begin to make sense, or understand their experience. Narrative inquiry focuses on listening to these stories and examining them with a wide lens that takes in the narrative and the context (Clandinin & Connelly, 2000). With pre-service teachers this process involves them reconstructing these experiences and explaining how and why they decided to become teachers. The learning experiences are impacted by coursework and time in the K-5 classroom practicum placements.

Building on the work of Dewey and his theories on thinking, experience and education, narrative inquiry places emphasis on listening to the stories of both the participant and the researcher (Clandinin & Connelly, 1990, 2000). In sum, stories serve as a social and cultural record of the experiences of an individual or group. Every person brings to the present a life lived through experiences, each which grew out of and built upon their prior experience. The researcher brings his/her prior experiences and situates the interpretation of experiences through that lens. Connelly and Clandinin (2000) stated, “Experience is what we study, and we study it narratively because narrative thinking is a key form of experience and a key way of writing and thinking about it” (p. 18). Narrative inquiry looks at experience, and the stories lived and told about that experience.

Narrative inquiry is a multi-leveled methodology that requires the researcher to merge themselves within a three-dimensional space, listening and reading narratives and data in such a way that they never lose site of the entirety of the context of the research (Clandinin, Pushor, & Orr, 2007). The remainder of this article will detail the process of narrative inquiry with examples from my own study that examined digital storytelling as a tool for reflective

practice among three pre-service teacher participants. The article will first discuss the participants in the study, then the K-3 literacy methods course that made up the context within the university teacher education program. Data collection methods will be outlined and explained in order to give the reader an idea of what narratives were collected and what other data were gathered in order to analyze and tell the stories of the three participants during the digital storytelling process and their course experience. Finally, the article will describe the layers of narrative inquiry and provide examples of each step in the data analysis process. The data analysis process within narrative inquiry is a complex, rigorous approach to understanding narratives and experience. This article will detail the process that I took as I collected and analyzed data that examined the experiences of three pre-service teachers enrolled in a K-3 literacy methods course and the accompanying course practicum.

Using Narrative Inquiry for Examining Digital Storytelling as a Tool to Support the Development of Reflective Practice

To describe the stages of data collection and analysis using interpretive methodology approaches of ethnographic and narrative inquiry it is necessary to give some background information about the focus of the research study that provides the examples for this explanation. The purpose of this study was to understand using digital storytelling as a tool for reflective practice and how it supported pre-service teachers as they began their journey towards becoming reflective practitioners and teachers. Participants were selected from within a K-3 literacy methods course that included a K-5 practicum experience and lasted a total of 15 weeks. The following sections will describe the participants, the research context and data collection methods for this study.

Participants

The participants selected for this study comprised a purposive sample. Merriam (1998) defined purposive sampling as being most appropriate when the study is designed to discover or understand a situation. The study was designed to explore using digital storytelling as a form of reflective practice among pre-service teachers enrolled in a K-3 literacy methods course. Three cases were selected that included a range of age, experiences and included members of both genders. Emphasis was placed on finding cases that brought multiple perspectives to the study and provided data that increased the understanding of using digital storytelling for reflective practice. I selected information rich cases that provided the most data to help understand the reflective process and the pre-service teachers' growth and learning during their first practicum experience through the narrative told within their digital story couched within interviews, observations, course artifacts and assignments. A K-3 literacy methods course was selected and class volunteers were solicited for inclusion in the study during the first week. I followed three pre-service teachers throughout the semester during their 15wk course and forty-hour practicum experience.

Course context

The K-3 literacy methods course was selected for this study because it already contained a digital storytelling component and the course was specifically designed to facilitate reflection throughout the semester. It was my desire to follow a typical class' experiences throughout the semester, rather than to highlight the technology by making the digital story a new requirement. As a participant observer, my presence became unobtrusive as I attended twelve class meetings and took part in class discussions and activities whenever

appropriate. I also observed each of the three participants for 30 minutes in their two assigned K-5 practicum experience placements.

When the digital storytelling activity was introduced, I collaborated with the course professor and we presented the activity together during week seven of the fifteen-week course. In that presentation we were careful to maintain the original goals for the assignment, which focused on reflection over the course and the practicum experience. I developed a professional working relationship with the professor of the course as well as the pre-service teachers enrolled in the course throughout the semester. When the digital storytelling project was introduced and assigned, my role remained primarily the same, as the students did not see a change in participation level in the course.

Data collection

Methods used in data collection in ethnography and narrative inquiry have many similarities. Both methodologies utilize field notes, journals, interviews, and other relevant sources such as documents and images (See Table 2). Narrative inquiry, however, also includes storytelling, letter writing and autobiographical and biographical writings, which continue to place the emphasis on the use of narrative for the construction of knowledge (Behar-Horenstein & Morgan, 1995; Connelly & Clandinin, 1990). McDrury and Alterio (2002) discussed the learning that takes place when pre-service teachers work with their own stories: “When students work with their stories they can enter into a dialogue about what they have experienced, be involved in critique of their practice, receive affirmation and engage in on-going learning” (p. 89).

Table 2. Data Collection

| Methods Course | K-5 Practicum | Outside of Classtime |
|--|------------------------|-----------------------------|
| Field observations | Field observations | Interviews (3) |
| Course Assignments (literacy reflections, reflective papers, final course reflection, | Informal conversations | Collaborative Blogs |
| Digital stories | | Email correspondence |

Data were collected and interpreted throughout the study, allowing the researcher to select appropriate methods and directions during the data collection phase in order to represent the participant's stories and experiences (Emerson, Fretz, & Shaw, 1995; Fetterman, 1998). Each stage of the research process was one of interpretation, ranging from the selection of the observations to record which participants to interview. Therefore, it was necessary for me to be diligent in taking field notes that explained those choices in a clear manner that could be used during the data analysis stages (Gerstl-Pepin & Gunzenhauser, 2002; Zembylas, 2005). Field notes were collected from throughout the semester as I attended twelve out of the fifteen class meetings. Observation notes were also collected during the practicum experiences in the K-5 school. Both sets of field notes allowed me to reconstruct the context where the research took place and gave me a clearer picture of the context with which to understand the stories being told by the pre-service teachers.

Interviewing was the primary source of data collection for this study leading up to the final project, the digital story. The interviews were semi-structured and began with a set of questions that were given to the participants before the interview (See Appendix A). The first interview was conducted during week five of the fifteen-week course and before the pre-service teachers had begun their practicum experiences. The second interview took place

during week nine and the third interview was a collaborative meeting between the course instructor, the pre-service teacher and myself. During the three interviews, the participants were encouraged to expand on questions and topics in order to facilitate the reflective process within the interviews. For purposes of narrative inquiry, the interviews are loosely structured and the researcher and participant often negotiated the direction of the interviews by calling upon their own narrative experiences (Connelly & Clandinin, 1990). Chase (1995) challenged researchers in narrative inquiry to use in-depth interviews as opportunities to ask for life stories while at the same time encouraging the participants to take ownership and responsibility for their stories.

Storytelling is a form of data collection native to narrative inquiry. Individuals share their life experiences with the researcher often telling and retelling and reconstructing stories throughout the research process (Connelly & Clandinin, 1990, 2000). Connelly and Clandinin (2000) referred to the importance of story throughout the research experience: “We imagine, therefore, that in the construction of narratives of experience, there is a reflexive relationship between living a life story, telling a life story, retelling a life story, and reliving a life story” (p. 71). These stories in all their various forms are collected as data, which will help to form the final narrative surrounding the phenomenon being studied. Data is often collected through stories that are autobiographical in nature (Connelly and Clandinin, 2000). In addition to the narrative stories told by the pre-service teachers during their interviews and on the course blog, a digital story was produced by each student, which served as a reflective narrative on their learning throughout the course. Stories of teaching, whether digital, oral or written, give insight to the researcher as they illuminate life experiences considered important and noteworthy to the participant.

Researchers engaged in narrative inquiry also may collect emails and letters written throughout the research relationship. During the course of my study emails were exchanged, often to follow up on questions from the interview or comments made in class or during a practicum experience observation. These pieces of textual communication, including email form a rich dialogue that can inform the narrative (Connelly & Clandinin, 1990, 2000). Multiple forms of data give the researcher an opportunity to understand the phenomenon from various perspectives, each perspective gives a voice to the story of the experience. With so many forms of data and so much of the data involving personal stories and observations the narrative researcher must be diligent when it comes to issues of ethics, anonymity and ownership.

To develop a comprehensive view of the context of the research, the K-3 literacy methods course and the K-5 practicum classroom experience, data were gathered from course artifacts, such as course syllabi, assignment criteria and readings. Course artifacts collected from the pre-service teachers included literacy reflections, literacy portfolio work, an assortment of daily assignments and artifacts from the practicum experiences and a final course reflective paper. The course artifacts and assignments added to the pre-service teacher narratives obtained through interviews and casual conversations to give a more comprehensive look at the pre-service teachers' learning experiences. Throughout the study data were collected and interpreted, allowing the researcher to select appropriate methods and directions in order to represent the participants stories and experiences (Emerson, Fretz, & Shaw, 1995; Fetterman, 1998). Each stage of the research process became one of interpretation from selecting which observations to record to which participants to interview,

therefore it was necessary for me to be diligent in taking field notes that explained the choices in a clear manner that could be used when describing and analyzing the study (Gerstl-Pepin & Gunzenhauser, 2002; Zembylas, 2005).

Data Analysis using Narrative Inquiry:

A Process of Multiple Lenses and Perspectives

As field texts are archived and interpretation begins, the narrative inquirer is faced with the on-going task of negotiating throughout the interpretive process. Situated within the three-dimensional narrative inquiry space the data are read and re-read moving back and forth between the dimensions in order to get a comprehensive view of the experience (Connelly & Clandinin, 2000). While interpreting the various forms of data that were collected it was my role to continually look at storylines that developed and examine them within the context of not only what was told through the narratives, but also what was not left out: “It is responses to the questions of meaning and social significance that ultimately shape field texts into research texts” (Connelly & Clandinin, 2000, p. 131). The narrative inquirer looks for patterns, narrative threads, tensions and themes while reading and re-reading the data collected during the research experience. The data are situated according to its social significance within the discipline of the researcher and the academic literature in the field.

This article follows a framework outlining the process involved in conducting narrative inquiry developed by McCormack (2000). McCormack developed the framework in an effort to give new researchers in the field of narrative inquiry a process they could follow while developing their interpretive text from the data. McCormack’s framework, based closely on the work of Connelly and Clandinin (2000), details a process of examining

interviews from “multiple lenses: active listening, narrative processes, language, context, and moments” (p. 282). Narrative inquiry enabled me to construct an interpretive story of the participants’ identities within the context of the interview as well as within the culture of the pre-service teacher education program. The framework describes the phases that enable the use of multiple lenses to examine data collected, including active listening, narrative processes, language, context and moments or episodes of reflection (See Table 3).

Narrative inquiry varies from ethnography in the role that theory plays in the research. The first concern for the narrative inquirer is the experience, as the focus remains on constructing a narrative that will give a comprehensive and meaningful view of the experience. The narrative is then situated within theoretical frameworks within the analytical process (Connelly & Clandinin, 2000). Research texts are shared with the participants during the data analysis phase, if not before, to get feedback and make sure that the narratives chosen accurately portray the participant’s point of view. Negotiation may be necessary at this point, which enables the research narrative to be co-constructed by the participants and the researcher. Data must be situated within the social and theoretical frameworks surrounding the research and the experience. Situating narratives in the social realm encourages the researcher to address cultural and contextual issues that impact the experience (Chase, 1995; Connelly & Clandinin, 2000).

During the interpretive process, the field texts serve as items that signal memories of experiences in the field. As the researcher writes up the field texts into research texts, the experience takes shape for the intended audience.

Table 3. Narrative Inquiry Analysis Procedures based on McCormack, 2000

| | |
|----------------------------------|--|
| Initial Data Analysis | Initial reading of all narratives, transcripts, blog entries, classroom artifacts and field notes |
| Active Listening | Listening to all interviews and digital stories for voice inflection and tone |
| Language | Reading all the data for the use of reflective terms and key words (eg. I think, I guess, in retrospect, and looking back now) |
| Contextual Analysis | Analyzing data with regard to the context during the time of the interview, observation or assignment |
| Focus on Narratives and Episodes | Analyzing data to identify moments of narrative or episodes of reflective practice |
| Weaving Together of Narratives | Information from all phases of data analysis were woven together in order to tell the participants' narratives |

One of the more challenging tasks during the interpretive stage is writing up the research narrative so that it is meaningful for the intended audience. Situating the text within the literature in the field as well as giving the narrative social context helps the audience relate to the narrative. This synthesis of the lived experiences supports the construction of the research narrative. As Connelly and Clandinin (2000) state, “The narrative inquirer does not prescribe general applications and uses but rather creates texts that, when well done, offer readers a place to imagine their own uses and applications” (p. 42). The following sections used McCormack’s (2000) framework to break down each stage of the data analysis required while using narrative inquiry.

Initial data analysis

The first step in the data analysis procedure, framed by McCormack’s (2000) work, included a thorough read through of all of the interview transcripts, field observation notes, and coursework artifacts. The purpose of this stage of data analysis was to identify themes

that informed the rest of the narrative inquiry process. All During this stage, initial feedback questions were directed to the pre-service teacher participants through the use of email correspondence. All data gathered were coded for emergent themes and categories that occurred throughout the material. During this phase, follow-up questions were directed to the pre-service teacher participants during informal conversations or email correspondence (See Table 3). During the early phases of data analysis, the process of weaving together the stories that made up the reflective journeys of the three participants began to take shape. The categories and themes that emerged reflected the purpose of the study and helped define the findings of the research. Two themes became evident at this early stage in the data analysis, the use of digital stories as a tool for organizing pre-service teacher's thoughts and reflections and the variance in the levels of reflection used by the pre-service teachers.

Active listening

The first step in this framework involved active listening. During the analytical process, I listened to the interview tapes, read the transcripts and reviewed the field notes, artifacts and observations in order to answer a number of questions that would help situate the experiences of the research participants temporally in personal, social dimensions and dimensions of place or context (Connelly & Clandinin, 2000). By revisiting the tapes and data several times, I was better able to reconnect with the storyteller and his or her story and revisit my own reactions at the time of the interview and during the research study. During the active listening phase, special notice is taken of voice inflection and tone in order to inform the interview's context. During the data analysis, I listened to the interview tapes several times, listening for subtle changes in the voice that might better inform the transcription and my field notes from the interview. For example, when listening to one pre-

service teacher's final interview, I found him very quiet overall, but when he talked about his digital story his voice became animated which gave me information about his personal pride towards the project. It also appeared that he felt more at ease sharing his stories of learning through the technology. This assumption was not based solely on the listening phase but once noted, it became a piece of the pre-service teacher's story combined with the other phases of data analysis.

Language

Concentrating now on the language used in the transcripts, I re-read the data and began asking questions regarding the use of language and its impact on the interpretation of the interview or stories told. Three areas of language are considered during this stage. McCormack (2000) identified these areas as "what is actually said, how it is said and what remains unsaid" (p. 291). During this phase of data analysis, I concentrated heavily on word choice, pauses, vocabulary specific to the culture being studied and word groupings or phrases. Here, special attention was paid to the participants using reflective terms and stories. The digital story was also analyzed for word choice and language usage. One pre-service teacher used reflective language often in his literacy reflection when describing the connection he made between his own experiences as a learner, and the activities he would plan for his future classroom. For example he wrote, "I remember elementary school, the reading textbooks, the word flashcards, and the low quality literature. This is not engaging to children, it does not spark imagination or creativity and children need that spark."

Contextual analysis

While examining the data with the contextual lens, I concentrated on the culture in which the study took place. For this study, the culture was the university teacher education

program and both the K-3 literacy methods course and the elementary school classroom where the practicum experiences were held. Each participant was placed in two different, K-5 grade level classrooms. The contextual relationships between myself, the participants and the context of the study were examined to get a comprehensive look at the participants' responses and stories. While looking at the data through this lens, questions of context and their impact or bearing on the stories told were examined. Much of the data for this phase of analysis came from detailed field notes taken during the K-3 literacy methods course and the K-5 practicum experiences. As I described the kindergarten classroom that two participants were placed in during the study, I wrote in depth about the room arrangement, the class management style of the teacher and the general demeanor of the students, which included several children with noticeable behavior issues. Here, my experience as a classroom teacher helped to inform the research and gave me insight into the general climate of the kindergarten classroom. The observations I recorded set the context for future interviews with the research participants as they discussed the teacher's management style and their initial surprise at the behavior issues and subsequent need for adaptation of lessons they had planned.

Focus on narratives and episodes

According to McCormack (2000), "moments may be signified by key words, phrases, descriptions of events, or stories, or other forms of discourse" (p. 294). Episodes may be signified by turning points in the stories identified by Denzin (1994) as "radical moments" (p. 510). However, moments may also be subtle but still impact the meaning of the story being told. An example of such a moment might be a personal reflective moment discussed by a pre-service teacher during an interview. Through the analysis of stories and episodes

related to the development of reflective practice, the data began to tell the tale of the developmental nature of reflective practice for the three pre-service teachers that took part in the study. During an interview, one of the pre-service teachers shared a story that expressed her surprise at how one behavioral incident played out in the classroom:

This one little boy was sitting in the hall, and he came back in and joined the classroom, and his reading time, like, he wasn't working with a group at that time. He was supposed to go get a book and bring it back to his desk. On his way there, of course he had to step on the little girl who was on the floor...he could have gone around. And so she squealed, and the teacher was like, 'Sit down in your seat and read your book.' And he goes, 'Stop looking at me!' And the teacher just looks at him, you know gives him that stern look, and he's like, 'I said Stop!' And just screamed at the teacher. And I was like...what? Are you kidding me?

The narrative stories are then constructed by the researcher and informed with additional information gathered through the use of the narrative process lens and returned to the participants for further clarification and feedback. Participants are asked to respond to the reconstructed stories on two main points, whether the stories make sense to them and whether they accurately represent the participants' experiences (McCormack, 2000). Stories within the data are identified, according to McCormack (2000), by recognizable boundaries, a series of linked events, and a unity of purpose or point to the story. Interview data, artifacts, field notes and observations provide stories relevant and vital to the interpretive story of each participant making up the story told throughout the research study. After identifying the stories within the data, individual aspects of the stories are identified for interpretation. The

stories told by the pre-service teachers during class discussions, interviews and as a part of their digital story all contributed to the narrative story surrounding the use of digital storytelling as a tool for reflective practice.

Weaving together narratives

Revisiting the epistemological grounding of interpretivist research tradition, reality is not only socially constructed, but multiple versions or views of that reality exist. It is important for researchers working within the interpretivist tradition to use multiple lenses as they examine and more deeply understand the data and the stories of their participants in order to tell a richer and more informed story of the phenomenon being studied. This study was designed to more deeply understand the reflective process taken by pre-service teachers during their K-3 literacy methods course as they completed their first practicum experience in a K-5 elementary school classroom. The study specifically examined the use of digital storytelling as a tool for reflective practice during that time frame. In order to maintain the rigor of the processes that make up narrative inquiry research, it is necessary that the researcher keep in mind several ethical concerns and considerations that occur when telling and interpreting the stories of participants.

Ethical Considerations

As narrative inquiry researchers develop relationships with their participants and negotiate entry into the research environment, they are faced with a number of ethical dilemmas. Unfortunately, according to Connelly and Clandinin (2000) these concerns do not vanish once the initial arrangements are made. Ethical concerns need to be kept in the forefront of the research agenda at all times. The primary responsibility of the researcher is to

his/her participants as the first audience, responsibility is also present to the academic community for which the research is being conducted (Connelly & Clandinin, 2000). Negotiations will continue throughout the research experience as issues arise and the researcher must be prepared to keep ethical concerns in the forefront of those decisions.

Polkinghorne (1995) discussed the inherent issues with the term “story” and the connection with a made up fairy tale. He suggested an alternative definition for the term story that better suites research, “narratives that combine a succession of incidents into a unified episode” (p. 7). Although this definition may satisfy some critics, some of the deeper meaning connected with Dewey’s theory of experience and the multilayered nature of narrative may be lost in this sanitized definition. The narrative researcher must be diligent in the recording of field notes, narratives and other data collected during the study in order to tell the most accurate story possible about the experience being studied. Marker (2003) offered a remedy to this concern by suggesting that researchers go beyond the present realm of the narrative through the dimensions of time, which allows the story to be shaped by the process of time and experience.

Another question that a researcher may struggle with involves the ownership of the stories or narratives. Connelly and Clandinin (2000) reminded us of the grand narrative of ethical research, to do no harm to our participants in the research setting or while writing up the research narrative. Negotiating the relationship responsibility throughout the research experience may be a useful way of avoiding this question later on in the research. The same can be said for issues of anonymity as participants may choose to remain anonymous after originally agreeing to let their name to be used in the research narrative. The researcher must be aware and ready to re-negotiate throughout the study as roles shift and change (Connelly

& Clandinin, 2000). Each of these concerns follows a researcher throughout the research study and must be addressed as soon as they arise.

Summary

“All forms of narrative share the fundamental interest in making sense of experience, the interest in constructing and communicating meaning” (Chase, 1995, p. 1). Dewey’s (1944) theory of experience defined learning as making a forward and backward connection to what we do or experience. Connelly and Clandinin (2000) expanded on Dewey’s work as they refer to doing research within an experience; narrative inquiry allows one to experience the phenomenon within its social context, examining it with an eye to the past, the present, the future. The teacher becomes the learner and the learner becomes the teacher within the framework of the experience (Dewey, 1944). The purpose of this article was not to focus on the findings of a research study but rather to place emphasis on the process involved when doing narrative inquiry research.

Storytelling can provide the reflective tools that allow our minds to cognitively connect with our prior knowledge through new experiences (Bruner, 1986). Using the tools available through digital storytelling with today’s pre-service teachers enables them to construct their teacher stories based on past experiences and beliefs, current practices and make informed choices about their development as a teacher. Digital stories can provide another opportunity for pre-service teachers to re-examine their experiences in the classroom and connect them with information learned in their university teacher education courses. “Storytelling, when combined with reflective awareness, provides opportunities for students to gain insights into their practical experiences” (McDrury & Alterio, 2002).

Interpretive methodology allowed me to look at the bigger picture, the culture of pre-service teacher education while focusing on using technology, specifically digital storytelling, within the practice of reflection. By using both ethnography and narrative inquiry a more comprehensive story of reflection and the use of digital storytelling by pre-service teachers during their K-3 literacy methods course was uncovered. This article focused on the research process and analysis that I used to examine digital storytelling as a strategy for reflective practice and as a tool to support pre-service teachers as they began their development as reflective practitioners. Specifically, I used McCormack's (2000) framework to guide my analysis with the goal of informing future researchers and those interested in narrative inquiry of the rigor and possibilities for using narrative inquiry to understand the narrative experiences of pre-service teachers. By using this example, the reader can gain perspective and thoughts that may help inform their own research and scholarship.

References

- Armstrong, S. (Ed). (2003). Snapshots! Educational insights from the Thornburg Center.
Lake Barrington, Illinois: The Thornburg Center.
- Behar-Horenstein, L. S., & Morgan, R. R. (1995). Narrative research, thinking and teacher thinking: perspectives and possibilities. *Peabody Journal of Education*, 70(2), 139–161.
- Chase, S. (1995). Narrative inquiry: Multiple lenses, approaches, voices. In R. Josselson. & A. Lieblich (Eds.), (1995). *Interpreting experience: The narrative study of lives, volume three* (pp.651-680). Thousand Oaks, CA: Sage Publishing.
- Clandinin, J., Pushor, D., & Orr, A. (2007). Navigating sites for narrative inquiry. *Journal of Teacher Education*, 58(1), 21–35.
- Connelly, F. M., & Clandinin, D. J. (1990). Stories of experience and narrative inquiry. *Educational Researcher*, 19(5), 2–14.
- Connelly, F. M., & Clandinin, D. J. (2000). *Narrative inquiry*. San Francisco: Jossey-Bass.
- Denzin, N. K. (1994). The art and politics of interpretation. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research*, edited by, (pp. 500-151). Thousand Oaks, CA: Sage.
- Denzin, N., & Lincoln, Y. (2005). *The sage handbook of qualitative research* (3rd ed.)
Thousand Oaks, CA: Sage Publications.
- Delamont, S., Coffey, A., & Atkinson, P. (2000). The twighlights years? Educational ethnography and the five moments model. *Qualitative Studies in Education*, 13(3), 223–238.
- Dewey, J. (1944). *Democracy and education*. New York: The Free Press.

- Eichhorn, K. (2001). Sites unseen: Ethnographic research in a textual community. *Qualitative Studies in Education*, 14(4), 565–578.
- Elbaz-Luwisch, F. (2005). *Teacher's voices: Storytelling and possibilities*. Greenwich, CT: Information Age Publishing.
- Emerson, R., Fretz, R., & Shaw, L. (1995) *Writing Ethnographic Fieldnotes*. Chicago: The University of Chicago Press.
- Fetterman, D. M. (1998). *Ethnography second edition: Step by step*. Thousand Oaks, CA: Sage Publications.
- Ferdig, R. (2004). Teaching technology through story: Learning to make sense of the story developer. *Journal of Technology and Teacher Education*, 12(4), 475–490.
- Gerstl-Pepin, C., & Gunzenhauser, M. (2002). Collaborative team ethnography and the paradoxes of interpretation. *Qualitative Studies in Education*, 15(2), 137–154.
- Geertz, C. (1973). *The interpretation of cultures*. New York: Basic Books.
- Lambert, J. (2002). *Digital storytelling: capturing lives, creating community*. Berkeley, CA: Digital Diner Press.
- Li, X. (2005). A tao of narrative: dynamic splicing of teacher stories. *Curriculum Inquiry*, 35(3).
- Luttrell, W. (2000). “Good Enough” methods for ethnographic research. *Harvard Educational Review*, 70(4), 499–523.
- Marker, M. (2003). Indigenous voice, community and epistemic violence: The ethnographer's “interests” and what “interests” the ethnographer. *Qualitative Studies in Education*, 16(3), 361–375.

- McCormack, C. (2000). From interview transcript to interpretive story: Part 1- Viewing the transcript through multiple lenses. *Field Methods*, 12 (282).
- McDrury, J., & Alterio, M. (2002). *Learning through storytelling in higher education*. London: Kogan Page.
- McEwan, H., & Egan, K. (Eds.). (1995). *Narrative in teaching, learning and research*. New York: Teachers College Press.
- Merriam, S. (1998). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass.
- Polkinghorne (1995). Narrative Configuration in qualitative analysis. In J.A. Hatch & R. Wisniewski, (Eds.), *Life History and Narrative*. Oxnard, CA: RoutledgeFalmer.
- Prasad, P. (2005). *Crafting qualitative research: Working in the postpositivist traditions*. New York: M. E. Sharp.
- Reed-Danahay, D. (2002). Turning points in textual strategies in ethnographic writing. *Qualitative Studies in Education*, 15(4), 421–425.
- Schank, R. C. (1990). *Tell me a story: Narrative and experience*. Evanston, IL: Northwestern University Press.
- Trueba, E. (1999). Critical ethnography and a Vygotskian pedagogy of hope: The empowerment of Mexican immigrant children. *Qualitative Studies in Education*, 12(6), 591–614.
- Vygotsky, L. (1989). *Thought and language*. Cambridge, MA: MIT Press.
- ethnography of emotions in teaching. *International Journal of Qualitative Studies in Education*, 8(4), 465–487

**CHAPTER 4. DIGITAL STORYTELLING AND ITS ROLE IN THE
DEVELOPMENT OF REFLECTIVE PRACTICE: EXAMINING THE STORIES OF
THREE PRE-SERVICE TEACHERS**

Paper to be submitted to *The Journal of Teacher Education*

Cynthia M. Garrety

Abstract

This article examines how digital storytelling supports pre-service teachers' development as reflective practitioners. The study focused on three pre-service teachers as they negotiated their learning and reflection within their K-3 literacy methods course and their first practicum experience within the university teacher education program. Digital storytelling is then examined as a viable process that might be used to develop reflective skills and knowledge among pre-service teachers.

The findings include implications for teacher education programs that strive to develop reflective practitioners while working with pre-service teachers from a wide variety of backgrounds and experiences.

Introduction

Teacher educators are using digital storytelling as a tool to support the development of reflective practice among pre-service teachers (Barrett, 2006; Hlubinka, 2003; Tendero, 2006). By introducing pre-service teachers to the art of reflective practice through processes like digital storytelling, teacher education programs can more adequately prepare teachers entering the profession with effective strategies for addressing what Dudley-Marling (1997) called “the messy realities of classroom practice” (p. xiii). The purpose of this study was to examine digital storytelling as a method to support reflective practice and how it supports the process that pre-service teachers go through as they learn to become reflective practitioners. In particular, the article introduces the reader to three students while analyzing their digital stories and learning narratives during their first semester enrolled in a teacher education program and their first methods block, specifically the K-3 literacy methods course. The resulting narrative analysis provides information about using digital storytelling to support the process of reflection and then offers recommendations that will help teacher education programs as they strive to prepare pre-service teachers to be reflective practitioners.

This article begins by discussing reflection and developing reflective practice within teacher education programs. It then presents the literature surrounding the use of reflection in teacher education, storytelling as reflective practice and digital storytelling as a tool for reflection. Finally, this study reports the narrative experiences of three pre-service teacher education students who were enrolled in a K-3 literacy methods course during the early part of their teacher preparation program. Each participant brought unique perspectives to the experience and through their digital stories and learner narratives, this study examines the development of reflective practice among these three pre-service teachers. Narrative inquiry

methodology was used for analysis and in turn, more deeply understand the pre-service teachers' experiences using digital storytelling and their growth as reflective practitioners within the context of their coursework and their first practicum experience in an elementary school environment.

Literature Review

Definition of reflection

According to Dewey (1993), reflection is a form of problem solving involving high-level thought that enables learners and teachers to link past knowledge and experiences with current classroom experiences and new knowledge. Dewey describes reflection as an active and deliberate cognitive process made up of a series of stages, questions and decisions leading to possible solutions. A recursive process of reflective practice requires the learner to combine internal thought and experience with professional action that may lead to modified practice in the field.

In addition, Schön (1987) described reflection as a simultaneous process where the learner immediately becomes an active participant as practice is refined and modified. Schön identified two stages, reflection on action and reflection in action, as processes that occur while on the job. For Schön, learners proceed through both stages almost simultaneously as they reflect on their actions, modify their behavior and then re-enter the reflective phase. Schön suggested that both stages of reflection are necessary in order to process information and synthesize it with new knowledge about classroom teaching. Both Dewey and Schön agreed that learners must achieve a highly developed sense of consciousness while stepping

back from their practice to examine their actual practice and therefore, gain a deeper understanding about their own actions (Hatton & Smith, 1995).

Dewey's process of reflection mirrors that of scientific inquiry (Rodgers, 2002). Reflection begins when the learner is presented with an experience that interferes or challenges prior knowledge or causes the learner to question previously held beliefs (Dewey, 1944; Rodgers, 2002). At this point, the learner forms a spontaneous interpretation of the experience and the process could end there, however the reflective practitioner steps back and names the problem or determines a question that had been developed through the experience. Once the question has been determined, possible explanations are generated and hypotheses are developed. The process continues with hypothesis testing and experimentation in order for the learner to more to deeply understand the experience. During this phase, the learner may consult peers, experts and literature in order to inform the process. According to Dewey, the need for time in the reflective process is key. Time allows learners to step back and examine the experience and how it fits with their existing knowledge schema. Thus, the reflective process must include some type of action otherwise it would simply be an exercise in casual thought.

Pre-service teachers exhibit more spontaneous interpretations than do expert teachers, which is why "teacher education programs may do well to provide novices with instruction and practice in the procedures and attitudes of reflective thinking" (LaBoskey, 1993, p. 26). By engaging in reflection, teachers develop a sense of professionalism as they begin to understand the actions of their students within their classrooms (Rodgers, 2002). In order for pre-service teachers to develop the necessary skills to become reflective practitioners, they need support and guidance within their university teacher education programs.

Reflective practice in teacher education

Greene (1990) defined reflective teacher practitioners as learners that, by engaging in higher order thinking, become imaginative and aware enough to decode and understand their current situations. By decoding and understanding their experiences, pre-service teachers can gain a better understanding of how their own knowledge and actions affect their current practices (Conle, 1996; LaBoskey, 1993). By requiring pre-service teachers to critically examine their own practice, teacher education programs can provide new teachers with the tools needed to synthesize their prior experiences with coursework theory. As reflective practitioners, pre-service teachers can more deeply understand practicum classroom experiences, which will allow them to better understand their own identities and how their identities may impact their teaching (Beattie, 2000; Dawson, 2006; Gomez, Walker, & Page, 2000).

New teachers note feeling shocked at the complexities of learning to teach and classroom realities when they begin their careers (Beattie, 1997; Mueller & Skamp, 2003). Feelings of inadequacy and self-doubt can lead to frustration as new teachers begin to navigate their first years in the classroom. Teachers new to the field reported being surprised by the levels of adaptability required, the levels of problem solving skills needed and the intensity of managing dilemmas that occurred on a daily basis (Beattie, 1997). Carter (1993) described the struggle of novice teachers as they try to make sense of classroom events and develop strategies for classroom practice. Reflective stories from past experiences can help them make sense of new experiences during the preliminary phases of reflection and enable them to grow as classroom teachers. Carter further stated, “through story, then teachers transform knowledge of content into a form that plays itself out in the time and space of

classrooms” (p. 7). In research that focused on pre-service mathematics teachers, Drake et al. (2001) also concluded that reflective stories could serve as a lens for teachers as they grow to understand themselves personally and professionally. As pre-service teachers gather stories from their experiences in the classroom they use interpretive structures such as stories within the reflective process to organize their ever-growing knowledge of teaching (Carter, 1993).

Several research studies have examined reflection as a vital piece within the teacher education curriculum. In a study that examined five prospective teachers, Mueller and Skamp (2003) identified the need for teacher educators to facilitate discussions among pre-service teachers about what it means to teach early on in the teacher education program. They also identified the need for teacher educators to support pre-service teachers as they begin to make connections between theory and practice by listening to their conversations and through discussion, become a part of the narrative process. Facilitating reflective discussions during practicum placements or as soon as possible after those experiences was determined to be a critical time for supporting pre-service teachers. It was determined that through these reflective discussions pre-service teachers made the connections between what they were learning on campus with what they were learning in the practicum classroom (Mueller & Skamp, 2003). In addition, Freese (2005) found that supporting pre-service teachers when they face moments of inconsistencies between their personal beliefs and practices and then helping them to reflect upon the process was an essential piece in supporting their development as teachers. Teacher education programs designed with the underlying goal of developing reflective practitioners have been shown to “enable teachers to analyze, discuss, evaluate and change their own practice, adopting an analytical approach towards teaching” (Calderhead & Gates, 1993, p. 2).

According to Bruner (1996), stories are one way that teachers as learners make sense of their experiences and reflect upon what they learn. As teachers begin to use story as a tool for reflection, the exploration of learning as a social endeavor made up of multiple perspectives and meanings becomes crucial (Bruner, 1986; Lyons & LaBoskey, 2002; McDrury & Alterio, 2002). Beattie (2000) collected approximately 900 narratives written by prospective teachers and identified that through the process of reflection pre-service teachers question their own experiences, their ideologies, beliefs and practices surrounding learning to teach. Reflective practice that enables pre-service teachers to make connections between prior knowledge and new experiences helps them connect with their university coursework and supports them during their professional growth. Storytelling is one tool for reflective practice that has emerged from the literature (Beattie, 2000; McDrury & Alterio, 2001; McVee, 2004).

LaBoskey (1993) identified a continuum for the reflective thinking of teachers. Her framework outlines a continuum for reflective thinking that moves between common-sense thinkers, alert novices and pedagogical thinkers. The alert novice category describes pre-service teachers who show traits common to both categories, they are moving along the continuum towards pedagogical thinking, but have not quite reached the intellectual depth of reflecting at a pedagogical level. Incoming teacher education students, such as the three pre-service teachers followed in this study, tend to enter teacher education somewhere along the continuum between the common-sense/pedagogical thinkers (LaBoskey, 1993). The author also noted that only those pre-service teachers that are functioning along the continuum closer to the pedagogical thinker end of the curriculum would fully benefit from a reflective curriculum such as the K-3 literacy methods course chosen for this study.

Storytelling as reflection

McDrury and Alterio (2002) defined storytelling as “a uniquely human experience that enables us to convey, through the language of words, aspects of ourselves and others, and the worlds, real or imagined, that we inhabit” (p. 31). The authors further described storytelling processes that are incorporated with reflection as contributing to the development of professional knowledge and a sense of self among teachers and pre-service teachers. Bruner (1986) described storytelling as a mode of reflective thought that enables teachers to make sense of what they have learned by distancing themselves from their own knowledge and to examine it more carefully through narrative. LaBoskey (2002) stressed the need for the reflective component within storytelling as professional development to take place within a social context such as the pre-service coursework environment. The social component to reflection and storytelling provides pre-service teachers with the opportunity to construct and reconstruct their knowledge within a context of learning and peer support.

Beattie (2000) stated, “In a narrative, holistic conception of a curriculum for teacher education, narratives and stories become the frameworks within which experience is reflected upon, shared and reconstructed in the light of new insights, perspectives, experiences and understandings” (p. 4). Lin et al. (1999) identified the need for learners to step back and reflect on how they actually solve problems and understand why they made certain decisions and what strategies they used to do so. Through story, teachers can compare their own strategies and methods in the classroom to those with more experience. Then teachers can actively monitor and evaluate their own thinking and professional growth (Conle, 1996; Rushton, 2004). Storytelling is just one tool that provides a way for teachers to examine their own thinking and experiences while building their own realities (Bruner, 1986).

In a study that examined pre-service teachers' understandings of literacy, pedagogy and multiculturalism, Clark and Medina (2000) described the process of narrative as a site of praxis where learners examine their thoughts, ideas and conceptions of the content being learned with theory and practice. Through a deep examination of their experiences, pre-service learners are better able to make meaningful connections and apply what they have learned to their own practice. Teacher stories of reflection once followed the design of oral storytelling, where stories were shared among peers and colleagues. The process has since changed to include journaling and online blogging. As digital images, video clips and audio have become more accessible; teachers have begun to include digital media in their stories of practice and reflection.

Digital storytelling as a tool for reflection

Digital storytelling is defined as traditional storytelling enhanced by digital media, narration and audio (Lambert, 2006). As digital media becomes a part of our daily lives, several have begun using digital storytelling in the classroom as a learning tool (Banaszewski, 2005; Davis, 2005; Hofer & Swan, 2005; Kadjer, 2004). Within the various genres of research that examine digital storytelling use in the classroom, only a few studies have focused on using digital storytelling for reflective practice in pre-service teacher education (Hall & Hudson, 2006; Kim, 2006; Tendero, 2006).

Posner (2005) identified the need for combining authentic experiences and reflective activities for pre-service teachers. Digital storytelling can serve as an intentional mechanism used by pre-service teachers to examine practicum experiences through the process of reflection for professional growth (Barrett, 2006; Hall & Hudson, 2006, Tendero, 2006). The process that underlies the creation of a digital story provides numerous opportunities for both

collaborative and individual reflection on the part of the pre-service teacher (Tendero, 2006). Using digital storytelling as a reflective tool provides pre-service teachers with opportunity and time to examine information and synthesize it in such a way that their learning becomes more meaningful to them and better connects theory with practice (Banaszewski, 2005).

A key element that defines a digital story is the focus on the creation of and process behind the story itself. Lambert (2006) began the digital storytelling movement with a structure of seven elements for the creation of a digital story that focus on the development, writing and rehearsal of the story as an integral piece in the digital storytelling process. Story circles are often used to allow digital storytellers to tell and retell their stories in order to reflect, revise and get feedback from others as they fine-tune their work. In her work with after-school youth, Hlubinka (2003) found that technology could actually get in the way of a good story if focus was not centered on the story itself before the production phase began. Ohler (2008) designed a model that is becoming widely accepted for developing digital stories (See Figure 1). Although predetermined frameworks for students such as Ohler's story mapping and Lambert's seven elements provide guidelines for students as they begin the writing process, selecting a topic continues to be a difficult task (Laundry & Guzdial, 2004). When examining digital storytelling as a reflective tool, we need to remain committed to the importance of story as a meaning making process and a way to process experiences in learning (Bruner, 1986; Dewey, 1944; Hlubinka, 2003). Through the collaborative process of revision and story-writing, pre-service teachers can learn with and from each other as they navigate learning to teach.

One stated goal of many teacher education programs is to prepare reflective practitioners. Teacher education programs must provide multiple opportunities for pre-service teachers to articulate their philosophies of teaching and learning and connect theory with practice (Beattie, 1997). Early research in the area has identified digital storytelling as a promising example of an activity that challenges pre-service teachers to examine their teaching experiences, while making connections to new knowledge by creating digital stories of personal reflection (Barrett, 2006). Blending digital media and the digital storytelling process may provide yet another tool for pre-service teachers as they become reflective practitioners and prepare for a career in the classroom.

This research study examined the role of using digital storytelling as a tool to support the development of pre-service teachers as reflective practitioners. Specifically, the study investigated how the process of constructing a digital story impacts the way pre-service teachers understood their own learning process during a K-3 literacy methods course and practicum experience. Case studies of three pre-service teachers were analyzed as each negotiated their personal process of becoming a teacher.

Methodology

Pre-service teachers arrive in our university teacher education programs with their own personal set of prior experiences and knowledge about the process of becoming teachers. This study examined that process through the use of ethnography and narrative inquiry as it uncovered the layers of the development of reflective practice used by three pre-service teachers during the course of their literacy methods course. This section of the article will discuss the theoretical framework behind the research methodology for the study. The article will then discuss in depth the research context, the K-3 literacy methods course and accompanying practicum as well as the three pre-service teacher participants in the study. Methods for data collection and the role of the researcher will then be examined as it relates to narrative inquiry and this study. The final section of this piece will look at data analysis with the multiple lenses of narrative inquiry with particular care taken to describe the process of that analysis.

Examining culture and phenomenon

This research study incorporated a blending of ethnography and narrative inquiry methodologies to examine using digital storytelling as a tool for reflective practice by pre-service teachers. Teacher education does not occur within a vacuum, as learning to teach is a

social endeavor made up of course experiences, classroom practicum experiences and interactions with both novice and expert teachers. To situate this research within the social context of teacher education, detailed field notes, observations, course artifacts and rich descriptions of the context of the course environment and practicum placements were collected and documented. By utilizing ethnographic research methods, the study was grounded within the culture of teacher education. Narrative inquiry methodology was used, with the purpose of examining and telling the stories of three individual participants in the course and the experiences that lead to constructing digital stories as a final piece of reflection on their learning throughout the semester.

By examining both the culture of teacher education as a context for the course itself and the narrative experiences of individual participants in the course, this study sought to provide a deeper understanding of pre-service teachers using digital storytelling as a tool for reflective practice. Individual narratives were used to document and reconstruct the phenomenon, in this case the use of digital storytelling as a tool for reflective practice, within the teacher education culture. To learn more about how learners develop pedagogical understanding in a K-3 literacy methods course, the digital stories became vehicles of reflection for the pre-service teacher participants. Ethnography was used to document the context in which the pre-service teacher's learned about and practiced reflective practice, the K-3 literacy methods course. Narrative inquiry methodology was used in order to look more closely at the individual narratives and the phenomenon surrounding the use of digital storytelling as a tool for reflective practice gave a comprehensive look at the experiences of the three participants in the study.

The course chosen for this study, a K-3 literacy methods course, was specifically designed by the professor to support reflective practice throughout the semester by using online blogs, group discussions and reflective writing assignments and projects. One stated course goal was to help pre-service teachers become reflective practitioners. Dewey (1944) identified the need for learners to reflect by reconstructing events, moments and experiences in order to understand those events in relationship to future experiences. As a culminating assignment for this course, the pre-service teachers developed a digital story based on their experiences throughout the semester.

Narrative interactions were collected throughout the semester to document conversations between the pre-service teachers and the course professor. During the course, pre-service teachers were encouraged to make connections between their prior knowledge and experiences and the new information they learned and experienced during the semester. These reflective experiences were then used and incorporated into the final course reflection paper and the digital storytelling assignment by the pre-service teachers.

Narrative inquiry addresses the interactions between the personal and social realms of learning, the past, present and future spaces in time, and the notion of place or situation within narratives of experiences (Connelly & Clandinin, 2000). Stories and personal narratives serve as a social and cultural record of an individual or group and each participant brings with them prior knowledge from past experiences. Pre-service teachers bring their prior experiences and beliefs about teaching with them as they begin their journey towards becoming a teacher. Narrative inquiry provides a means to understand the journey that pre-service teachers take as they integrate new knowledge and experiences with prior conceptions about teaching (Connelly & Clandinin, 1990). These authors describe the

benefits of collecting narratives as pre-service teachers begin to experience classroom situations by life narratives that help them make meaning of new information and new situations.

Individual narratives from pre-service teachers are then used to reconstruct the phenomenon being studied; in this case, the development of reflective practice and the impact digital storytelling can have to support reflection. Connelly and Clandinin (1990) also identified the use of storytelling as reflection on practice, as a tool that can provide insight into a teacher's beliefs leading to pedagogical change. The intent behind this theoretical framework is to situate the researcher within a three-dimensional space that allows the narratives to be viewed from multiple perspectives and be more fully experienced and understood (Connelly & Clandinin, 2000). By examining pre-service teachers' reflective stories, new insights can be gained into the ways that they make connections between theory and practice, and the process they undertake to become reflective practitioners. Many stories told by pre-service teachers focus on the anxieties surrounding new experiences in classroom practicum experiences and the complexity of learning to put new skills and knowledge into practice (McDrury & Alterio, 2002). By more fully understanding the process of reflection, and the use of tools such as digital storytelling to support this process, teacher educators can develop strategies to scaffold experiences for future teachers that will support their growth as reflective practitioners.

Narrative inquiry methodology is grounded in the work of Dewey and the notion of the interaction between the social context and personal experience (Clandinin & Connelly, 2000; Dewey, 1944). Therefore, Dewey's conceptions of reflective thought will be used as the foundation for this study. Reflection is identified as a process of meaning making that

moves the learner from one experience to the next with deeper understanding (Dewey, 1938; Rodgers, 2002). According to Dewey, the process of reflection is also a systematic and rigorous way of thinking with its roots in scientific inquiry and not a casual process of thought without action. For this study, reflection takes place within a social context (i.e. the teacher education experience), and requires attitudes such as enthusiasm for the subject matter, open-mindedness, readiness and responsibility on the part of the pre-service teacher. These attitudes that place value on both personal and intellectual growth not only apply to the pre-service teachers, but also included other individuals involved in the course experience and the classroom practicum environment (Dewey, 1933; Rodgers, 2002). One defining factor that separates Dewey's view of reflection and that of Schön (1983) is the need for time between the experience and the process of reflection and its subsequent action. The issue of time for reflection becomes vital when examining a semester-long experience for pre-service teachers that will document their journeys towards becoming reflective practitioners through course and practicum experiences.

Reflective practice also requires the practitioner, in this case the pre-service teacher, to examine their personal theories and beliefs (Boud, Keogh, & Walker, 1985; Dewey, 1938; LaBoskey, 1993). However, pre-service teachers seldom enter the field with the knowledge and maturity necessary to complete this task from the perspective of a teacher because their knowledge base comes from experiences as students (LaBoskey, 1993). Often, pre-service teachers take a more common sense approach to reflection and look at the task or the task's structure for their reflection instead of examining the connection of the task to new knowledge or a challenge to their beliefs (LaBoskey, 1993). The challenge becomes how to empower novice learners with the tools necessary to confront these challenges to their beliefs

and ideals as students and help them develop deeper understandings from the perspective of a teacher (LaBoskey, 1993; Rodgers, 2002).

For pre-service teachers to become reflective practitioners, teacher educators might provide activities such as online blogging, reflective paper assignments and mediate class discussions so that learners can confront their personal beliefs and begin to examine them in connection with new information and experiences (Amobi, 2006; Dawson, 2006; Hatton & Smith, 1995). Digital storytelling is a tool that some teacher educators are beginning to investigate as a means for pre-service teachers to reflect on their experiences in both the university classroom and the practicum setting (Barrett, 2005; Hlubinka, 2003; Tendero, 2006). By focusing on stories of reflection and learning using the theoretical framework of narrative inquiry, this study examined the benefits and challenges of using digital storytelling as a tool for reflection by pre-service teachers.

Research context

This study examined the learning experiences of pre-service teachers attending a large Midwestern university during a required literacy methods course offered during the first semester after acceptance in the teacher education program. Approximately 500 undergraduate students were enrolled in the university's elementary teacher education program during the fall semester of 2006 and twenty-two undergraduate students were enrolled in the K-3 literacy methods course. Before enrolling in the literacy methods course, students were required to have taken an introductory technology course, a general practicum, an introductory curriculum course, a social foundations of education course and an educational psychology course (Norton-Meier & Drake, 2008). Pre-service teachers enrolled

in the course were in the third year of a four-year teacher education program and classified as juniors by the university.

Signed informed consent documents were obtained from all students enrolled in the course during a regular class meeting that took place during the first week of classes (See Appendix B). Three volunteers were selected to take part in the study because they represented a rich cross-section of the university's elementary education program enrolled in the K-3 literacy course. Each participant brought a unique perspective to the research study in terms of his or her technology skills and prior experience in the classroom. The three participants were selected after being observed during their K-3 practicum experiences and within the university classroom setting. By selecting participants with varying levels of expertise and experiences, the narrative surrounding using digital storytelling as a tool for reflective practice became a story told from multiple perspectives. Therefore, a richer dialogue was gathered for informing the practice of supporting reflection among pre-service teachers (See Appendix C).

The course syllabus described the literacy methods course and practicum experience as "a collaborative teaching and learning adventure." In contrast to practicum experiences offered in other teacher education courses at this university, this course provided a more integrated practicum experience that made it unique for this study's purposes (See Appendix D). Pre-service teachers began their K-5 classroom practicum experiences during week three of a fifteen-week course (Norton-Meier & Drake, 2008). Experiences in the K-5 classrooms took place in two-hour blocks of time per week and ended with two full days of teaching in each of the two placements during the semester (See Appendix E). Class meetings and discussions were also scheduled at the K-5 elementary school during times when the pre-

service teachers were not in classrooms with students. Class meetings held immediately after practicum experiences in the elementary school building gave multiple opportunities for pre-service teachers to share experiences and make connections between course material and actual classroom instruction under the guidance of the course professor. The course meetings were structured to give the pre-service teachers time to debrief with the professor of their literacy methods course and their K-3 mathematics methods course, both of whom were guiding the practicum experiences. These class meetings also provided time for discussions that surrounded the integration of mathematics and literacy instruction and time for collaborative small group work to discuss coursework and practicum experiences.

The K-3 literacy methods course structure included lectures, demonstrations, group discussions, small group interactions, hands-on literacy experiences and an emphasis on personal reflection. Course materials were designed to cover theories and processes of literacy development in grades K-3 with emphasis on teaching methods and exploration of how children learn to read, write, listen and visualize. During the semester, pre-service teachers were required to complete literacy investigations that required them to actively engage with texts written by children, by teachers, by parents and by key researchers and philosophers in the area of reading and literacy education (Norton-Meier, 2006). Upon completion of the literacy investigations, each pre-service teacher was asked to write a reflective paper on that experience in the practicum classroom. Other course assignments included pen pal letters, field work challenges in the K-5 classroom, a literacy portfolio and a series of literacy reflections. The literacy portfolio included the literacy investigations and other artifacts selected by the pre-service teachers from course assignments.

Table 1. Digital Storytelling Reflective Assignment Requirements

| |
|---|
| <i>Digital Storytelling Reflective Assignment Structure:</i> |
| <ul style="list-style-type: none"> • Length: 2-6 minutes • Minimum of 5 artifacts (pictures, video, writing samples, audio, scanned images, poems, one-pagers, any other artifacts from your portfolio) |
| <i>Story must include:</i> |
| <ul style="list-style-type: none"> • Audio: music, spoken word, student samples, video track • Visual: scanned images, photographs, student work, video, text, clip art • Movement: transitions, video effects |
| <i>Possible programs to use:</i> iMovie, iPhoto, eZedia, PowerPoint, Dreamweaver |
| <i>Theme must tell your unique story</i> |
| <ul style="list-style-type: none"> • Children's book, poem, one-pager, major focus of the class, focus on children, talk, writing, reading, assessment, inquiry |
| <i>Free of print convention errors</i> |
| <i>Presentation</i> |
| <ul style="list-style-type: none"> • Show up and present • Respond to others who share in the group • Present story again at the final conference |

As a culminating assignment for this literacy methods course, the pre-service teachers were required to develop a digital story that reflected on their personal and professional growth throughout the semester. Specific requirements were given for the digital story to provide structure, but the assignment was designed to be a reflective exercise spanning the pre-service teachers' experiences throughout the semester (See Table 1). A checklist based on these requirements was given to the pre-service teachers and was used to evaluate the digital stories by the course professor (See Appendix F).

The K-5 classroom practicum experiences that accompanied the literacy methods course were designed in such a way to support pre-service teachers as they navigated their coursework surrounding literacy development and the teacher's role in the elementary

literacy classroom (Norton-Meier & Drake, 2008). A pilot partnership was established between the university teacher education program and one local K-5 elementary school. Specifically, this first practicum experience provided these pre-service teachers with a learning environment that included a large number of English Language Learners. The elementary school had a high mobility rate of 41 percent, which was more than two times that of any other school in the district. In the fall of 2006, 200 of the 256 students were new to the school. Each pre-service teacher was assigned to two different grade levels within the K-5 classrooms with most of the teachers placed within the K-3 environment. Placements at the first grade level assignment lasted six weeks. For the first five weeks, pre-service teachers spent two hours per week at that placement and then during week six they spent two full days in that setting (see Table 2). The second grade level assignment was shorter in duration than the first placement. The pre-service teachers were in their second classroom placement for two hours twice a week for three weeks, and then two full days during the fourth week.

Table 2. Literacy Methods Course and Practicum Schedule

| Wk | Literacy Methods Course | K-5 Practicum |
|-----------|--------------------------------|----------------------|
| 1 - 2 | MW 2 hours | |
| 3 | MW 2 hours | 2 hrs. 1 day/wk |
| 4 | MW 2 hours | 2 hrs. 1 day/wk |
| 5 | MW 2 hours | 2 hrs. 1 day/wk |
| 6 | MW 2 hours | 2 hrs. 1 day/wk |
| 7 | MW 2 hours | 2 hrs. 1 day/wk |
| 8 | | 2 full days |
| 9 | MW 2 hours at K-5 school | 2 hrs. 2 days/wk |
| 10 | MW 2 hours at K-5 school | 2 hrs. 2 days/wk |
| 11 | MW 2 hours at K-5 school | 2 hrs. 2 days/wk |
| 12 | | 2 full days |
| 13- 15 | MW 2 hours | |

Two placements allowed the pre-service teachers to experience two grade levels and interact with two in-service teachers during the practicum experience. In addition pre-service teachers were given field challenges during the practicum experiences for pre-service teachers to make connections between classroom learning and experiences in the K-5 classrooms. Examples of field challenges included a child case study to complete with elementary students and the development of lesson plans to carry out in the K-5 classroom.

Role of the researcher

As a participant-observer in this research study I was introduced to the students in the course during the first class period and explained that I would be focusing on their experiences in the course and their learning as they navigated the literacy methods coursework and their practicum experiences. Merriam (2002) described the participant-observer as a researcher who becomes a part of the culture she is studying while capturing individual narratives in order to describe in rich detail the experience being studied.

As a graduate teaching assistant for the required introductory technology in teaching course in the department, I was already a familiar face to many of the students and this supported my role as participant-observer in the literacy course throughout the semester. In fact, I had been contacted by several of my former undergraduate students who were enrolled in the literacy methods course in the two previous semesters, Fall and Spring 2005, to help them with their assignment. The fact that digital storytelling was already integrated into the course made it a perfect fit for the context of this research study.

The professor and I had a very different storied beginning. We had never met before I asked to use her literacy methods course in my research study. However, we soon found that we had many things in common. We both had undergraduate degrees in child development

and a love of story that provided us with a common ground with which we planned and discussed the digital storytelling assignment. I would take the lead while introducing the assignment but the professor would provide most of the support during the project in class while I observed and answered any questions directed my way. It was our intention to keep the digital storytelling assignment true to its original form in the literacy methods course and not to alter it simply because it was the focus of this study.

The focus on the final course project, a digital story, was introduced during week seven as a piece of the course expectations as well as a focus for my research. The course professor and I agreed that I would take the lead while introducing the assignment but the professor would provide most of the support during the project in class while I observed and answered any questions directed my way. It was our intention to keep the digital storytelling assignment true to its original form in the literacy methods course and not to alter it simply because it was the focus of this study.

Pre-service teachers took part in a mini-workshop during one two-hour class period several weeks after my presentation, near the end of the semester. The workshop took place after they had completed a storyboard for their digital stories and began with small groups of four meeting to discuss their stories and ask questions of the group. The workshop continued with time for individual work on their digital stories with the course professor available to answer questions and provide technical assistance. Many pre-service teachers chose to leave during the digital storytelling workshop after the group work had been completed feeling confident in their understanding of the digital storytelling task and the software they would be using to construct their digital stories. Some pre-service teachers did stay and work out technical aspects of their stories or get feedback from other class members and the course

professor regarding the development of their stories and questions regarding technical issues such as adding sound to their digital stories.

My role as participant in the course grew over the weeks and eventually I took a minor role in class discussions and small group activities. The majority of my time in the course was designated to taking field notes and recording observations. My role as a participant-observer allowed me to understand the context of the course experience as well as the individual reflective narratives as an entire experience instead of analyzing the data as separate pieces of the puzzle.

Participants

Participants for this study were obtained on a volunteer basis after discussing the research project with the pre-service teachers during week one of the semester. All pre-service teachers were enrolled in this literacy methods course and had been accepted into the university's teacher education program and were all pursuing their Bachelor of Science degrees in Elementary Education with a K-8 teaching certification. Three participants were selected in order to examine three distinct narratives from multiple perspectives. These participants were selected because of their potential to add to the narrative surrounding the learning process during the K-3 literacy methods course, the practicum experience and the digital storytelling project. Each piece of the semester's work, coursework, practicum experiences, and the digital storytelling project helped tell the story of their development as teachers. All names of the participants have been changed in order to protect their confidentiality. A brief description of each participant follows.

Chris

Chris was one of three males enrolled in the literacy methods course during the fall semester of 2006. Chris had no prior elementary classroom experience and this made him unique from the other two participants in the study. As a twenty-one year old, single male, he was selected because of his gender, as well as his role as a technology student leader and expert within the teacher education program. I had a prior work relationship with Chris, as he worked as a student assistant in the department's technology and learning laboratory while supporting students and faculty using the lab for their undergraduate and graduate classes. Chris was also pursuing a science specialization and brought that unique perspective to how he looked at the elementary classroom and the K-3 literacy methods course. His K-5 practicum placements included five weeks in a third grade classroom and five weeks in a kindergarten classroom.

Molly

Molly was a thirty-one year old female who had returned to college to pursue a teacher education degree. Molly had completed a bachelor's of science degree in English from another Midwestern university. As a married student, Molly represented yet another voice within the pre-service teachers' stories during this K-3 literacy methods course. Molly's story was also unique as she already had three years of teaching experience in a high school English classroom. Molly also taught with the *Teach for America* program, which includes an intense six-month training before placing community and professional leaders in schools as classroom teachers. Molly's involvement in drama also gave another lens with which to view her development throughout the semester. Her classroom practicum

experiences took place in a kindergarten classroom and a fifth grade classroom. Molly rated herself as a moderate user of technology.

Brenda

Brenda represented the ‘traditional’ teacher education student who attends this university. Single, white and twenty-one, Brenda always wanted to be a teacher. She came from a family of educators and saw the profession as fun and exciting. Brenda showed a strong grasp of the professional expectations in her early interviews, but also voiced self-doubt and uncertainty that go along with any new experience. She had some previous classroom experience through an earlier course taken at a community college, and although excited, she expressed some anxiety about returning in the role of teacher instead of observer. Brenda was placed in a fourth grade classroom for five weeks and then a first grade classroom. She commented that her technology skills were moderate, as she had taken the required instructional technology course and used email and the internet frequently.

Data collection

Interviews were conducted with each of three participants at three separate meetings held throughout the semester (See Table 3). The first interview was scheduled during week five of the 15-week course and took place during the week following each participant’s first experience in the elementary classroom. The second interview took place during week 9, near the end of each student’s practicum experience. The third interview was conducted as part of the final course conference held during week 15 and included the course professor. The digital stories were shown in class to all students during the course meeting the week prior to the final interview and then shown again during the final interview and discussed with the professor and myself (See Appendix F). All interviews were semi-structured with

Table 3. Data Collection

| Methods Course | K-5 Practicum | Outside of Classtime |
|---|--|-----------------------------|
| Field observations | Field observations | Interviews (3) |
| Course Assignments (literacy reflections, reflective papers, literacy portfolio, final course reflection, | Informal conversations documented in field notes | Collaborative Blogs |
| Digital stories | | Email correspondence |

the goal being for participants to share teaching stories and narratives of experience surrounding their course experiences and connections being made between the literacy course curriculum and happenings in the elementary classroom. When quoting interviews, observations or email correspondences, the first name of the research participant is used with an abbreviation of the type of data that were quoted.

Another primary source of data was collected in the form of field observations in both the university classroom and the elementary classroom setting. As the researcher, I attended twelve two-hour classes throughout the semester and observed the three pre-service teacher participants for thirty minutes on two separate occasions during their practicum experiences in the elementary school. The participants were placed in two K-5 elementary classrooms at different grade levels during the semester. Each placement lasted a total of four to six weeks and the time that the pre-service teachers were in the classroom increased from 2 hours a day for several weeks to two full day experiences per week. Observation times in the elementary classrooms varied according to the schedules of the in-service teachers and daily plans, but each participant was observed for thirty minutes at least twice in each elementary grade level

placement. I felt it was necessary to frequently attend classes and become a participant in the course experience in order to construct a context for the study. As a participant-observer, I was able to make connections and understand the observations in a more detailed manner, which helped to inform my interview questions (Emerson, Fretz & Shaw, 1995).

Reflective blogs were used as another data source. These online journals allowed students to share their reflective thoughts throughout the semester with their peers and became a rich resource that chronicled learner growth and their development as reflective practitioners. All students in the course were encouraged to keep a reflective blog within the course management software program used by the university. Student blogs were collected for the three students who participated in the study and became another piece in the tapestry that formed the context and narrative for this study. Written work on the part of the pre-service teachers that included literacy ethnographies, lesson plans and experience and coursework reflections were also collected. Artifacts of student work, handouts and course readings were used to support and triangulate the interview and observation data.

The culminating piece of data that was collected and analyzed were the digital stories created by the pre-service teachers as a way to reflect upon their learning in the literacy methods course and its accompanying practicum experience. The digital stories were analyzed within the context of the course through the use of field notes, interviews, course assignments and blogs. By situating the digital stories within the context of the literacy methods course a more complete narrative of the learning experience and the way that digital stories helped the participants reflect on their personal experiences during the literacy methods course was developed.

Data analysis

The initial analysis of the participant data included a complete reading of all interview transcripts, blog entries, classroom artifacts and observational field notes. The digital stories created by the participants were also viewed and the recorded interviews were listened to again noting participant voice inflection. During this initial interaction with the data it became evident that there were several consistent themes present throughout the data. A developmental continuum of reflection became evident while reading each participant's narrative and by examining the field notes and artifacts. As the developmental continuum of reflection emerged, I began to use LaBoskey's (1993) model for reflective practice among pre-service teachers to visualize the differences between the narratives of the participants. LaBoskey describes a continuum of growth from common sense thinkers who rely on description and the structure of the task, to alert novices who are motivated by a desire to know, learn and understand and finally pedagogical thinkers reside at the far end of the continuum. Finally, LaBoskey states that pedagogical thinkers are able to differentiate between the role of student learner and teacher and exhibit higher order, complex cognitive intellectual strategies as they reflect on their own experiences. Another theme that emerged in this initial analysis was the shift in the role from reflective student to the role of reflective teacher. The pre-service teacher participants took different paths as they navigated their own journey between reflective student and reflective teacher during the data collection period. Data that supported the initial themes were highlighted and color-coded and then were shared and discussed with the three participants via email. These themes were used as one layer of analysis as the data were examined from multiple perspectives to understand the various narratives representing the reflective process among the pre-service teacher participants.

The next lens that was used to analyze the data involved a process that examined the language participants used in their narratives, blogs and digital stories. Data were analyzed for the use of reflective words (e.g. “I think,” “I guess,” “in retrospect,” and “looking back now”). When participants used reflective words this indicated that they were beginning to develop reflective practices as teachers. In fact, they progressed from reflecting as a tool for describing actions observed or completed to making connections between their own learning, experiences and learning theory. Since the data were coded to identify a developmental continuum of reflection the actual identification of reflective words added further validity to the premise of a particular theme within the data. As the participants became more comfortable using reflection, they began to use more definitive words such as yes instead of yeah and spoke with more certainty and direction.

After data were analyzed for overall themes and specific language, it was time to go back through the data and pay careful attention to the context within which the narratives were situated. The ethnographic field notes became a key component during this stage of data analysis as these data were used as a lens to examine the connections to the social component between the narratives, blogs, course artifacts and the digital stories. This phase of data analysis focused on telling the story of the classroom experience, the practicum placements and the social context of the K-3 undergraduate literacy course. This contextual piece forms the very core of narrative inquiry and serves to situate the narratives within both a personal and social realm, and within past, present and future spaces in time (Clandinin & Connelly, 2000; Dewey, 1944).

Once the data were situated contextually and analyzed for language usage and prevalent themes, the data were analyzed through a lens that focused on moments of

narrative or episodes. By re-examining the data in this manner, I identified experiences that supported the development of reflective practice. The analysis of the data as episodes or stories also gave insight into the process of empowerment that the participants went through during their experiences in the K-3 literacy methods classroom and within the practicum environment. Each lens provided a new layer of analysis that gave the findings validity and clarity.

The final step in the data analysis involved the weaving together of the multiple lenses into a bricolage that makes up an interpretive story that documented the participant's development of reflective practice and the role digital storytelling had within that process. One lens alone would not have been enough to adequately tell the story of the three unique participants and their learning episodes. The resulting narrative and the findings that grew out of this multi-layered process of analysis provided a co-authored story about reflection and digital story that was developed between the participants and myself and grounded in the social context of the pre-service teacher education culture.

Analysis of digital stories

Each digital story was analyzed using the same multiple lens approach as the rest of the data using narrative inquiry. Attention was focused on choice of words, images and audio, when appropriate. The digital stories were also analyzed for their adherence to the story mapping visual portrait of a story by Ohler (2008) that I shared with the class in my presentation and the inclusion of key elements of a story. Another key piece in the analysis of the digital stories was the final interview that took place with the course professor. During this interview, each pre-service teacher showed his or her digital story while emphasizing the meaning of the story in relationship to reflection. This interview gave the student a chance to

expand on the story itself and discuss the process and the reason that they developed their stories in a certain manner or with a particular theme. Digital stories were analyzed not only as stand-alone creations but also within the social context of the K-3 literacy methods course.

Findings

This study followed three pre-service teachers on their personal journeys through a K-3 literacy methods course and the accompanying K-5 classroom practicum experience. In order to gather data about how the role that the digital stories played in their growth as reflective practitioners, interviews, blogs and course reflective assignments including a digital story were collected and analyzed. The study's purpose was to examine how pre-service teachers used digital storytelling as a tool for reflective practice.

The three participants each brought unique narratives to the study in the form of past experiences and knowledge, and the stories of their experiences helped to inform the study and provide multiple lenses with which to understand the data. Their narratives informed the study and gave multiple perspectives to the study surrounding the use of digital storytelling as a method to support their development as reflective practitioners. Chris, one of the quietest students in the literacy methods classroom brought his technology expertise to the project. Chris was also the only participant who had no previous experience in the K-5 classroom before the literacy methods course. Brenda, with her infectious enthusiasm, brought a life-long dream to teach and a desire to learn all she could during the semester, not only from her professor, but also the teachers and students she would work with in the classroom. Molly was the most 'experienced' of the group, having taught high school English for three years.

Her previous classroom experience provided a unique lens with which to view her narrative and her process of becoming a reflective practitioner.

Digital storytelling was implemented in the K-3 literacy methods course as a method to support reflective practice. Its role was examined and its potential as a tool to support reflective practice analyzed through the experiences of the three pre-service teachers. Pre-service teachers come to the university teacher education program at various stages of the reflective process, and this study will shed light on that process and the continuum novice teachers travel on their journey towards becoming reflective practitioners (LaBoskey, 1993). After analyzing the three participants' narratives, digital stories, course assignments, blogs and observational field notes, two themes emerged. The first theme focused on digital stories as organizational tools to support reflective practice, the second theme described the developmental nature of reflective practice skills among the research participants. Both themes began to explain how these three pre-service teachers move from thinking like undergraduate students as learners to becoming reflective practitioners and teachers. Their reflective thoughts shed light on how they began to make connections between coursework and practicum classroom experiences and what that knowledge means to them as future educators.

Digital storytelling as an organizational tool for reflective practice

This study looked specifically at how pre-service teachers used digital storytelling as a method for reflective practice. Lin et al. (1999) discussed using technology as a tool that supports the learning process. Technologies allow students to display the problem-solving skills involved in reflective practice and make visible their thought processes (Banazewski, 2005; Hlubinka, 2003; Paull, 2002). Without the availability of such tools, some students

may have difficulty engaging in high-level reflective thought. The participants in this study began the course with varying levels of technology experience. The course was specifically designed to support the development of reflective practice. The digital storytelling assignment was woven into the coursework and used as a comprehensive strategy for reflecting upon the pre-service teacher's coursework and K-5 classroom practicum experiences. Upon completion of the digital storytelling assignment the pre-service teachers were asked about its role as a tool for reflection and how it fit with their learning styles and the course itself. Students were also assigned a final course reflective paper and took part in a final interview where they showed their digital stories and discussed their learning over the course of the semester. In the following sections each pre-service teacher's digital story will be described and then examined according to LaBoskey's (1993) continuum for reflective practice.

Chris' digital story

Chris developed a digital story that pitted two fictional characters, Assimilation and Accommodation, against their arch nemesis, Procrastination. The narrative of the story described how the trio negotiated the K-3 literacy methods course experiences. The digital story was created with Comic Life © so it looked like a graphic novel and included references to both practicum experiences and coursework that had impacted Chris' knowledge throughout the semester. The story itself was growth oriented and told the tale of Chris' journey towards becoming a classroom teacher. Course assignments were discussed in connection with what Chris had learned from them. For example, when discussing a timeline of memories assignment, Chris made connections between his own experiences with literacy and his teaching style. He also discussed the need for teachers to be aware of their student's

prior experiences with literacy and thought that was an important piece in understanding how children will learn to read and write. Chris' story stood out because it illustrated his learning process as he mediated his various selves, through the characters in his story, and then made connections with the type of teacher he was becoming which situates him within LaBoskey's (1993) pedagogical thinker.

For Chris, the challenge observed in his digital story was how to include all the activities he had completed during the semester and tell the story of how he integrated his new knowledge into his existing schema (See Figure 2). Chris successfully used his technology expertise to tell his tale of reflection. As a very quiet member of the class, this reflective assignment gave him a unique way to share his ideas with his classmates and professor.

Figure 2. Excerpts from Chris' digital story

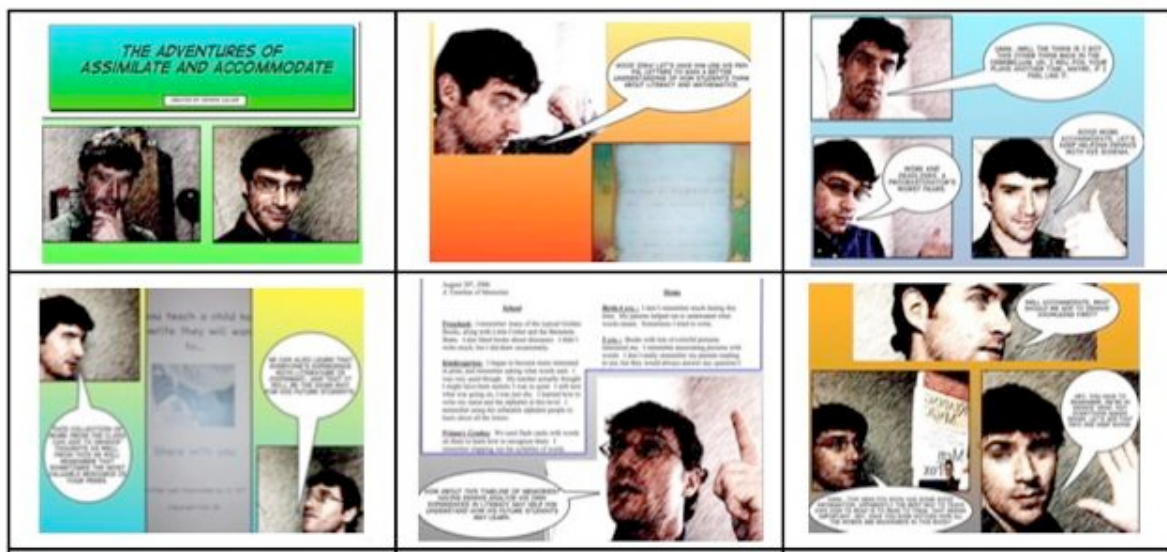


Figure 3. Excerpts from Brenda's digital story



Brenda's digital story

Brenda's digital story was based on K-5 classroom experiences that focused on learning to read. During this practicum experience, one of her students had given a rather interesting answer when asked why it is so hard to learn to read. That student's response could be described as a moment of surprise for Brenda (Dewey, 1944; Rodgers, 2002). Brenda noted that, "I wasn't expecting them to be so insightful. One little girl, I asked her why reading was so hard and she said, because when you put two letters together they don't make the same sound as they do when they are by themselves. And I was just amazed for a six year old to say that" (Brenda, I 2). As a result, her digital story went on to interview other students and adults and portrayed the range responses she collected from several people (See Figure 3). She ended her digital story with thoughts on what she will do in her future classroom to facilitate learning to read. Her digital story and reflective thoughts were

imaginative, strategic, and showed that Brenda was thinking ahead, all traits that LaBoskey (1993) identifies with the pedagogical thinker

Molly's digital story

Dr. Seuss and his poetry provided the foundation for Molly's digital story (See Figure 4). Although she chose not to use images, she wrote a rhyming tale about her own fears about teaching young children and how she overcame them. Her reflective story was descriptive, telling about what she did and how she felt, but few learning connections were evident from coursework or practicum classroom experiences. Molly focused on her personal fears about teaching young children and her personal journey of confidence as she had more experiences in the K-5 classroom. Molly's reflective digital story focused on a short term view of learning and relied mostly on her own personal experiences as a way to learn to teach, which identifies her reflective skills within the common-sense thinker end of the continuum for reflective thinking of teachers (LaBoskey, 1993). Molly's digital story indicated that she was still learning and was upfront with me about the fact that digital storytelling was not a project that supported her own reflective process.

Examining the digital storytelling findings

One consistent benefit that I found among the participants in this study, using digital storytelling as a method for reflection was its strength as an organizational tool (Paull, 2002; Tendero, 2006). Digital storytelling allowed the participants to make their reflective thoughts concrete and visible (Tendero, 2006). Hlubinka (2003) described a digital story as a canvas for personal expression. This was evident in Chris' digital story as he used the application Comic Life © and made his story take on the look and feel of a graphic novel.

Figure 4. Excerpts from Molly's Digital story

| | | |
|--|--|--|
| <p>What was I Scared of?</p> | <p>Well...</p> <p>I was walking up to ... And I saw nothing scary. Just some hallways and some lockers And yet I felt a little wary.</p> | <p>Then I was deep within the building When suddenly I saw them. Dozens of tiny faces Waiting for me to teach them!</p> |
| <p>I wasn't scared. But, yet, I shivered. What should I teach these kids first? What should I say to help them? Perhaps I'll just observe first.</p> | <p>And then they moved! Those tiny kids! They all were kind of squirming These kindergartners it seemed to me Would need more than observing.</p> <p>So I jumped in. I jumped in quick. I said "Well hello to you, sir" I don't remember what happened next. The rest was just a big blur.</p> | <p>After that, some weeks went by. Assessments, assessments, assessments. (Did anyone else find it really quite hard To finish those gosh darn assessments?)...</p> <p>Well, I finished them all somehow. And I thought I could stop all the stress'n But then I suddenly remembered "Now I have to teach a whole lesson!"</p> |

Organizing course artifacts and experiences into his digital story, Chris reflected back and documented prior experiences, as well as made predictions about himself as a future teacher. While discussing his digital story, Chris remarked:

It was helpful in that it let me take a step back and examine what I had learned and how that learning built upon itself. It also forced me to decide what were the key and most important aspects of what I had been learning (Chris, email correspondence)

Reflecting on a semester's worth of learning and experiences can be a daunting task. Creating a digital story to tell about their learning experiences appeared to be a powerful way for students to organize and understand a large amount of information. Brenda commented, "There we so many different directions you could go with the digital story. I thought creating

the digital story was a great way for us to put together ideas and reflect from our semester” (Brenda, email correspondence).

Using digital storytelling as a method of reflection gave the pre-service teachers control over the story they would tell about their learning (Hlubinka, 2003; Paull, 2002). The process of creating the digital story gave them a process that they could use to guide their thinking as they constructed their own story of experience and learning throughout the semester (Hlubinka, 2003; Tendero, 2006). Organizing the artifacts and experiences into a story became a useful way for the pre-service teachers to organize themselves and see in a visual format their own learning journey (Paull, 2002).

The digital story became a medium for sharing and engaging peers with their own personal learning process (McDrury & Alterio, 2002; Paull, 2002). Brenda reflected on the benefit of sharing her story with the class and viewing other digital stories, “With my digital story I was able to learn not only from the students but also from adults. It was neat to see how your peers reflected and to show your peers what impacted you the most” (Brenda, email correspondence). Chris echoed her sentiments, “It was a good way to reflect on and analyze our learning” (Chris, email correspondence). Chris’ story allowed him, as a very shy student in large groups, to make use of his strong technology skills and develop a reflective story not only about his learning in the course, but also about his journey in teacher education. Reflection becomes more motivating when there is the expectation with a public audience to evaluate and provide feedback to the story (McDrury & Alterio, 2002; Paull, 2002).

As the participants developed their digital stories with their audience in mind, they made decisions about which artifacts would best tell their stories and get their message across

to their peers (Paull, 2002). However, not all of the study's participants found the experience helpful. Molly, a pre-service teacher with moderate technology skills, expressed that the digital story was just another assignment to her. She indicated that it was fun, but she did not find it to be a tool that helped her to reflect. "If I am going to be completely honest...looking back...creating a digital story was not exactly a defining moment of my development as a reflective teacher. Certainly it was a 'cool' or 'creative' assignment, but at the end of the day it was an assignment, not a life changing moment in my educational history" (Molly, email correspondence).

Brenda also encountered some technology issues while developing her digital story, but they did not impact her thoughts about the benefits of using the digital storytelling process for reflection. When asked about her digital story and its usefulness to her she replied, "I thought creating a digital story was a great way for us to put together ideas and reflect from our semester. I could organize my thoughts and create something meaningful to me and my peers" (Brenda, email correspondence). How technology was used to create the digital stories was dependent on the students' prior experience and comfort level with the various applications available to them. The assignment's primary focus was for the pre-service teachers to reflect on the semester, and what they had learned.

I had concerns over the lack of critical reflection in all but one of the pre-service teacher digital stories. Both Brenda and Molly told stories that connected with their experiences, but they were noticeably less reflective than Chris' digital story. One element of the digital storytelling process that seemed to be missing was the process of story development. A crucial element in digital storytelling is the collaborative development of story through the writing process, making revisions and sharing with peers (Hlubinka, 2003;

Lambert, 2006; Ohler, 2008; Paull, 2002). With this important element missing, the chance for using stories for meaning making, as Bruner (1986) defined it, is less likely. For digital storytelling projects to reach their full potential as a tool for reflective practice, time needs to be given for the development of the stories that are being told and opportunities for collaborative sharing amongst peers as the stories develop (Banazewski, 2005; Hlubinka, 2003; Paull, 2002). Activities such as story circles, peer-to-peer story sharing and public sharing of the digital stories before the final project was due are examples of how the story element of this assignment would have been supported and strengthened.

As pre-service teachers begin to learn how to reflect and critically examine their own practices while learning new material, methods and pedagogy, their understandings deepen and connections force them to change and modify their practice (Tendero, 2006). When asked to describe their own classrooms, each pre-service teacher described with little variation, the classroom that they had talked about when discussing their favorite teacher or the teacher that impacted them most. They had instinctively known good teaching as the teaching that made them feel valued, motivated and engaged.

Development of pre-service teachers as reflective practitioners

Pre-service teachers enter university teacher education programs with a wide variety of prior experiences and knowledge about teaching. They bring views and attitudes primarily as students in the education experience (LaBoskey, 1993). The pre-service teachers in this study began our conversations with tales from their own experiences as elementary students and gradually shifted to telling stories from their classroom experiences from the point of view of a future teacher. With this in mind, teacher education programs should realize the influence of student perceptions and prior learning when designing activities to promote the

growth of reflective practitioners (Rodgers, 2002; Tendero, 2006). Reflective practitioners develop the ability to reflect critically on their experiences in a rigorous manner that will allow them to connect their experiences with theory and make informed changes to their teaching practice. LaBoskey (1993), through an extensive review of the literature surrounding teacher education and reflection, described a learning continuum between what she calls common-sense thinkers and pedagogical thinkers. I will use this continuum to examine the growth of the three pre-service teachers as reflective practitioners during their involvement in this K-3 literacy methods course (See Table 4).

Dewey (1944) described moments of surprise or challenge to previously held beliefs as the catalyst for reflective practice. Each participant expressed moments in the elementary classroom that challenged what he or she expected to see when he or she entered the teaching environment. Chris, a science enthusiast describes feeling surprised that so much time was spent on literacy and writing. Returning to a student-learner perspective, Chris replied, “You kind of have an image, I had an image kind of what it would be like before I started, now it’s more realistic I think” (Chris, I 2).

Chris began the literacy methods course with no prior experience in the K-5 classroom and often commented on his eye-opening experiences as he became involved in the realities of teaching. Brenda had some prior K-5 classroom experience through a community college course, but also expressed moments of surprise in her own learning journey.

Table 4. Adapted from LaBoskey, V. (1993). Continuum for reflective thinking of teachers

Note: From *Conceptualizing Reflection in Teacher Development* by J. Calderhead & P.

Gates, (Eds.). 1993, New York: RoutledgeFalmer.

| Common-Sense Thinker | Alert Novice | Pedagogical Thinker |
|---|---|--|
| Self-orientation | Ability to reflect on new course information and experiences | Student-orientation |
| Short-term view | Driven by a will to know | Long-term view |
| Reliance on personal experience in learning to teach | Still may view the reflection asked for by teacher education programs as externally motivated | Differentiates teacher and learner roles |
| Metaphor of teacher as transmitter | Value open exploration and continual growth | Metaphor of teacher as facilitator |
| Unaware of need to learn (Knowledge comes from being a student) | May exhibit characteristics of both common-sense thinkers and pedagogical thinkers | Open to learning: growth oriented |
| | | Acknowledgement of need for conclusions to be tentative (needs feedback/triangulation) |
| | | Means/ends thinking: awareness of teaching as a moral activity |
| | | Strategic |
| | | Imaginative |
| | | Grounded in knowledge of self, children and subject matter |

Such experiences provide opportunities for pre-service teachers to critically reflect and by doing such, better understand their actions and build upon their knowledge about teaching (Conle, 1996; LaBoskey, 1993, Rodgers, 2002; Tendero, 2006). By reflecting on their early experiences they bring to light past beliefs and knowledge that may impact the way they synthesize new experiences and information (McDrury & Alterio, 2002, Paull, 2002; Rodgers, 2002; Tendero, 2006).

Student behavior was another area that all three pre-service teachers expressed overwhelming issues of surprise and concern as they began their practicum experiences (Rodgers, 2002). “I was really surprised with how some of the kids acted. Um, most of them stay on task but I could definitely tell the problem children” (Brenda, I 2). Brenda went on to describe a particular incident where a fourth grader was screaming in defiance of his teacher and discussed how surprised she was that the teacher had to deal with that every day. Chris had several challenging experiences in the kindergarten classroom and expressed the learning that took place as a result of those experiences:

There are a lot of children with behavior problems in the class. There is a student on medication. It's just kind of, kind of eye opening for me, you know it's kind of like you always hear about it but you never really get to experience it. These kids really do need to have help and I need to know what I'm doing and I really want to be able to help them, it's good practice (Chris, I 2).

According to LaBoskey (1993), pre-service teachers begin to understand educational topics and the process of reflection itself during the reflective process. Chris and Brenda showed that they were using reflection in order to fit their expectations of what the K-5 classroom would look and feel like with the realities of their observations (Rodgers, 2002). Throughout their experiences in the literacy methods course and the K-5 classroom, both pre-service teachers would use reflection to confront other moments of discontent and use these moments to inform their growth as teachers (Rodgers, 2002; Tendero, 2006).

Until now, I have not described Molly's narratives regarding her prior knowledge and experiences or moments of surprise. Molly came to the K-3 literacy methods course with

three years experience in teaching high school English with the *Teach for America* program. Her narratives resonated from somewhere in between the student view and the teacher-focused reflective viewpoint. After a six-month period of intense teacher training followed by three years of classroom experience teaching English in a high school, she expressed narratives that dealt with how teaching affected her personally. In one excerpt, Molly discussed why she left her job as a high school English teacher:

There was not one second of my life that wasn't about teaching, not a second, and well, you know there were things that were wonderful about that, you know, I was starting to get older and knowing that I wanted to have a family. I wasn't sure how much of the frustration was because I was in a, you know my ninth graders were reading at a third grade level and the whole school was poor, and the whole town was segregated. Like how much of it was that and how much of it was teaching? (Molly, I 1).

Molly's interviews were decidedly different from Brenda's and Chris' as they appeared to come from a less reflective point of view. Whereas, Brenda and Chris attempted to connect their feelings of surprise with their prior experiences, Molly's narratives were more descriptive in nature (Rodgers, 2002). Brenda talked at length about her experiences as a student and connected those experiences with her decision to teach at the elementary level, "I was not a strong math student. What really got me excited was figuring out how kids do math. I'm in a kindergarten room right now, and I'm really excited to see like what we do in kindergarten versus second or fourth grade" (Molly, I 1). Later in the semester, when Molly was placed in a fifth grade classroom her enthusiasm continued, but she still was speaking

from a decidedly descriptive perspective, “I think it’s just so fascinating to see when kids are just starting to make sense of things, and there’s something also very enticing about having more of a clean slate when you get them” (Molly, I 2). Molly focused on the description of herself as a math student and what she hoped to see in the classrooms. “I was not a strong math student, and I was really scared about that, like for Teach for America you have to teach summer school before you start...and I was like, oh my god, how do you teach math?” (Molly, I 2). She did not, at this point make connections between how she was taught math and what she had learned during her mathematics methods course that might inform what she expected to see during her practicum experience. Each pre-service participant showed unique levels of readiness to reflect based on their prior experiences and knowledge about teaching and the subject matter.

Brenda and Chris fall into the alert-novice category, entering the K-3 literacy methods course with a fairly strong inquiry orientation that LaBoskey (1993) defined as an ability to reflect on educational topics in light of new course information and experiences and make the necessary connections that make up the process of reflection. One of Brenda’s most interesting narratives came after she had read a book assigned for the K-3 literacy methods course that dealt with reading aloud to children.

The ...book really changed my idea of teaching how to read. I was always like this is how you teach it, this is how you do it, this is when you start, and I mean yeah, it’s good to read to kids but I never realized how much...I thought you sent them to school, and that’s when they learned to read. But I just never would have imagined that kind of impact, reading aloud to them could have (Brenda, I 2).

By reflecting on the new knowledge contained in the book and how that had changed her way of thinking about how children learned to read, Brenda was making important reflections about teaching that were grounded in knowledge about the subject matter and children which identifies her with pedagogical thinkers (LaBoskey, 1993; Rodgers, 2002; Tendero, 2006).

Chris was engaged in reflective practice through a number of narratives that at first identified more with the teacher as giver of knowledge, a stage that LaBoskey identifies in the common-sense realm,

So, first I read them a story, ... I was like okay I had their attention, and I was reading a story, and then we did that on the rug and then we moved to the tables to practice writing the letter M. ...And just the transitions of changing materials and trying to get every student to write the letter M...It was just hard to keep their attention, and then all the transitions (Chris, I 2).

Through this narrative, Chris shows that he is beginning to move along the continuum of reflective thought from the description of the teacher as transmitter through reflecting on the experience, towards thoughts that are informed by experiences and knowledge. He follows up this narrative with another later in the interview when he discusses how he re-visited the above narrative in the literacy methods class and with his cooperating teacher:

She (cooperating teacher) tries to run a tight ship which she has to with these kids, but at the same time I'm doing my reading and writing lesson...they knew how to write their names and stuff. I was like, why

are we doing all of this if they already know how. We talked about this in class [literacy methods course] too. But that's just the way they do it now, and I mean, some of them, there are a few students that can read already almost, and some can't identify letters. It's just this huge range. Maybe some do need to work on letter identification and how to form letters. You know, I think just writing in general would be better for them (Chris, I 2).

Molly's narratives place her towards the common-sense thinker end of the continuum, but definitely identified her as making strides as an alert novice. Molly reflected upon classroom experiences in a more descriptive manner, showing a great deal of reliance on her personal experience in learning to teach. One example of such a narrative came during our second interview as Molly described her placement in the fifth grade classroom. Tendero (2006) found that pre-service teachers are able to identify with teaching styles they do not wish to incorporate into their own professional persona, even in the early stages of their teacher education program. This narrative was critical of the teaching style of her cooperating teacher, but showed that Molly was beginning to make pedagogical connections as she came up with her own ideas about how to better teach the material:

In this case she (cooperating teacher) asked for a certain date that something happened. A student who was an English Language Learner raised his hand, and he said the date, but he said it like a number. He said like 1, 607 instead of 1607, and I'm thinking, wow, all this stuff we've talked about relating math to other areas, what an interesting place for you to say, it is that number isn't it?" (Molly, I 2).

This classroom experience gave Molly the platform to reflect on her role as a teacher and form ideas of how the experience could have been more effectively taught. As pre-service teachers enter university teacher education programs, teacher educators need to remember that not all of them will be functioning as alert novices and may need some scaffolding when assigned reflective activities (LaBoskey, 1993; Tendero, 2006). Powerful reflective experiences may need to be provided for all novice teachers, but pre-service teachers may need to be taught how to reflect as they move along the reflective continuum from common-sense thinker to pedagogical thinker, and navigate the journey towards becoming teachers (Tendero, 2006).

As the semester continued, Chris and Brenda began to make connections between their coursework and showed that they were beginning to differentiate between their role as a student and a classroom teacher. In his final interview, Chris made connections about how science, his specialty, could be integrated within other subject areas. Here, Chris uses the term *you* to describe himself as a classroom teacher:

You can read books about nature that relate to science as well. You can explain why the leaves are falling off the trees in the fall. You can actually explain why they happen as well as explain just using plain stories (Chris, I 3).

As Chris began to see himself as a teacher, he also discussed his plan for parent involvement, “I would like to involve parents as much as I could, keep them informed of what I’m doing in the classroom as well as talk about the fundamentals of knowledge” (Chris, I 3). Brenda showed strong teaching skills in the classroom,

during her second practicum experience in the fourth grade classroom, she reflected on her own teaching abilities:

I feel like I'm a lot more confident. I had taken other classes where we had taught, at the community college but it wasn't actually a lesson plan and the teacher could always come back and take over (Brenda, I 2).

During her final interview Brenda expressed numerous ideas for her future classroom that incorporated the coursework from the literacy methods course and her classroom practicum experiences such as reading workshops and a lot of hands on activities and projects.

I will definitely do Reader's Theatre...there were a lot of ESL kids, and they really enjoyed the Reader's Theatre, because it gave them an opportunity to read out loud. They could take it home and practice it before they did it in front of everyone, so they were really confident in what they were trying to say...Lots of reading out loud, no matter what age. I think all kids benefit from it. I like it. Even in my children's literacy class, when she would read aloud I loved it (Brenda, I 3).

Several studies have pointed to the need for teacher education programs to provide new teachers with tools for examining their own practice (Beattie, 2000; Dawson, 2006; Gomez, Walker, & Page, 2000; Tendero, 2006). In the following section, I will examine the findings surrounding the use of digital storytelling as a tool to support pre-service teachers as they become reflective practitioners.

Conclusion

The journey to become a teacher is unique and requires pre-service teachers to critically reflect on their own practice, as well as make high-level connections to what they are learning in the university classroom. The learning journey is supported by the collaborative efforts of peers, cooperating teachers and teacher education professors. Experiences that are scaffolded to support reflective practice, such as digital storytelling, can provide the necessary support for pre-service teachers to move from common-sense thinkers to alert novices and finally to professionals, grounded in pedagogical knowledge.

The K-3 literacy methods course that served as the social context for the pre-service teacher narratives was designed to support the development of reflective practices. Through assignments such as online blogging that allowed for peer collaboration during reflection on course discussions, course readings, assignments and practicum experiences in K-5 classrooms, the professor put into place a number of scaffolds to help pre-service teachers navigate the continuum of reflective practice development. One of the strengths of the K-3 literacy methods course was the time allowed for the pre-service teachers to debrief after their practicum experiences and make connections collaboratively with their peers and professor. Time was scheduled immediately after the practicum experiences in most instances for the pre-service teachers to share stories and discuss concerns or learning that had taken place during the experience. The digital story assignment was developed as a comprehensive tool for pre-service teachers to organize and reflect upon their course experiences as a whole and as such it was successful for the most of the participants in this study. All pre-service teachers do not come into the university teacher education program as

reflective thinkers and therefore, an activity like digital storytelling, when used as a tool for reflective practice may not be successful for all learners.

Digital storytelling became a way for the pre-service teachers in this study to organize and reflect on their course experiences. Each pre-service teacher brought prior knowledge and experiences to the K-3 literacy methods course as well as their own skills as reflective learners. By using LaBoskey's (1993) continuum for teacher reflection, each pre-service teacher was described using the continuum as it documented their professional growth through their navigation of the coursework and the K-5 practicum experiences. The digital storytelling assignment supported the pre-service teachers as it provided them with a medium to reflect upon and express their learning and the experiences they had in the K-5 classrooms.

The projects assigned in this literacy methods course, such as collaborative blogging, reflective written work and group discussions, provided useful scaffolding strategies that supported pre-service teachers in developing their reflective thought. However, additional support structures are needed to help scaffold the development of the story throughout the entire digital storytelling process. On-going scheduled opportunities must be available for students to receive feedback from peers and the professor throughout the story development piece of the project. The phases of storytelling mesh so closely with Dewey's (Rodgers, 2002) phases of the reflection process that providing support and feedback during story development could assist pre-service teachers in making the critical reflections that would inform their understanding of teaching and impact their own future practice as teachers in the classroom. During the construction of the digital story, more discussing about the negotiation between what artifacts, images, narrative and music to include in the final project might have

prompted more reflective conversations between participants where reflection could have been modeled by peers and instructors alike.

One recommendation for the digital storytelling assignment in the future would be to put more emphasis on the storytelling process and to provide a scheduled series of collaborative revision sessions between peers. By including time for pre-service teachers to share their stories of reflection with each other and then fine tune their reflective stories before working with the technology, opportunities increase for feedback from peers, as well as more time for continued reflection focused on developing the story. Another recommendation for the digital storytelling assignment in this K-3 literacy methods course has to do with the timing of the assignment itself. As with most reflective assignments, they are usually due at the end of a semester when students are busy finishing assignments for other courses and preparing for finals. This may have affected story construction and time spent on critical reflection over a large number of experiences. Reconsidering the number of projects assigned in the course and when they are due might help improve the quality of such a comprehensive project.

Over the course of the semester, the K-3 literacy methods coursework, the K-5 practicum experience and experience with reflection, the pre-service teachers studied grew in their ability to critically reflect and examine their own practice. It is important to note that they began at different levels on the continuum for reflective thinking and that their growth is measured within their own unique learning pace and prior experiences and knowledge. Digital storytelling was shown to support and assist in the development of reflective practice by the pre-service teachers in the study. Learning to teach is a journey, full of twists and

turns, bumps and celebrations, learning to reflect can help pre-service teachers better understand each turn in the road as they travel towards becoming classroom teachers.

References

- Amobi, F. (2006). Beyond the call: Preserving reflection in the preparation of “highly-qualified” teachers. *Teacher Education Quarterly*, 33(2), 23–25.
- Barrett, H. (2006). Researching and Evaluating Digital Storytelling as a Deep Learning Tool. In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2006* (pp. 647–654). Chesapeake, VA: AACE. Retrieved on May 20, 2007, from <http://electronicportfolios.org/portfolios/SITESTorytelling2006.pdf>.
- Banaszewski, T. (2005). *Digital storytelling: Supporting digital literacy in grades 4-12*. Unpublished masters thesis, Georgia Institute of Technology.
- Beattie, M. (1997). Fostering reflective practice in teacher education: Inquiry as a framework for the construction of a professional knowledge in teaching. *Asia-Pacific Journal of Teacher Education*, 25(2), 111–128.
- Beattie, M. (2000). Narratives of professional learning: Becoming a teacher and learning to teach. *Journal of Educational Enquiry*, 1(2), 1–23.
- Boud, D., Keogh, R., & Walker, D. (Eds.). (1985). *Reflection: Turning experience into learning*. New York: Kogan Page.
- Bransford, J., Brown, A., & Cocking, R. (1999). *How people learn: Brain, mind and experience*. Washington, DC: National Academy Press.
- Bruner, J. (1986). *Actual minds. Possible worlds*. Cambridge, MA: Harvard University Press.
- Bruner, J. (1996). *The culture of education*. Cambridge, MA: Harvard University Press.
- Calderhead, J., & Gates, P. (Eds.). (1993). *Conceptualizing reflection in teacher development*. Abingdon, Oxon, UK: RoutledgeFalmer.

- Carter, K. (1993). The place of story in the study of teaching and teacher education. *Educational Researcher*, 22(1), 5-12,18.
- Clark, C., & Medina, C. (2000). How reading and writing literacy narratives affect preservice teacher's understandings of literacy, pedagogy, and multiculturalism. *Journal of Teacher Education*, 51(1), 63–75.
- Conle, C. (1996). Resonance in preservice teacher inquiry. *American Educational Research Journal*, 33(2), 297–325.
- Davis, A. (2004). Co-authoring identity: Digital storytelling in an urban middle school. *Then Journal*. Retrieved online on May 23, 2008, from: <http://thenjournal.org/feature/61/>
- Dawson, K. (2006). Teacher inquiry: A vehicle to merge prospective teachers' experience and reflection during curriculum-based, technology-enhanced field experiences. *Journal of Research on Technology in Education*, 38(3), 265–292.
- Dewey, J. (1933). *How we think*. Buffalo, NY: Prometheus Books.
- Dewey, J. (1938). *Experience and education*. New York: Collier Books, Macmillan.
- Dewey, J. (1944). *Democracy and education*. Buffalo, NY: Free Press.
- Dewey, J. (1993). *How we think: A restatement of the relation of reflective thinking to the educative process*. Boston: D.C. Heath.
- Drake, C., Spillane, J., & Hufferd-Ackles, K. (2001). Storied identities: Teacher learning and subject matter context. *Journal of Curriculum Studies*, 33(1), 1–23.
- Dudley, M. C. (1997). *Living with uncertainty: The messy reality of classroom practice*. Portsmouth, NH: Heinemann.

- Elbaz-Luwish, F. (2007). Studying teachers' lives and experiences: Narrative inquiry into K-12 teaching. In D.J. Clandinin (Ed.), *Handbook of narrative inquiry: Mapping a methodology* (pp.357–382). Thousand Oaks, CA: Sage.
- Emerson, R., Fretz, R., & Shaw, L. (1995). *Writing ethnographic fieldnotes*. Chicago: The University of Chicago Press.
- Feiman-Nemser, S. (2001). From preparation to practice: Designing a continuum to strengthen and sustain teaching. *The Teachers College Record*, 103(6), 1013–1055.
- Freese, A. (2005). Reframing one's teaching: Discovering our teacher selves through reflection and inquiry. *Teaching and Teacher Education*, 22,100–119.
- Gomez, M., Walker, A., & Page, M. (2000). Personal experience as a guide to teaching. *Teaching and Teacher Education*, 16(7), 731–747.
- Greene, M. (1990). Revision and reinterpretation: Open spaces for second chance. In D. Inbar (Ed.), *Second Chance in Education an Interdisciplinary and International Perspective*. (pp. 37–48). Hampshire, UK: The Falmer Press.
- Hall, L., & Hudson, R. (2006). Cross-curricular connections: Video production in a K-8 teacher preparation program. *Contemporary Issues in Technology and Teacher Education*, 6(3), 328–341.
- Hatton, N., & Smith, D. (1995). Reflection in teacher education: Towards definition and implementation. *Teaching and Teacher Education*. Great Britain: Elsevier Science Ltd.
- Hlubinka, M. (2003). *Behind the screens: Digital storytelling as a tool for reflective practice*. Unpublished masters thesis, Massachusetts Institute of Technology.
- Hofer, M., & Swan, K. (2005). Digital moviemaking: The harmonization of technology, pedagogy

- and content. *International Journal of Technology in Teaching and Learning*, 1(2), 102–110.
- Kadger, S. (2004). Enter here: Personal narrative and digital storytelling. *English Journal*, 93(4), 64–68.
- Kim, H. (2006). How do we change preservice teachers' perceptions of scientists using digital storytelling? In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2006*, (pp. 689–691). Chesapeake, VA: AACE.
- LaBoskey, V. (1993). A conceptual framework for reflection in preservice teacher education in J. Calderhead & P. Gates. (Eds.), *Conceptualizing reflection in teacher development*. Abingdon, Oxon, UK: RoutledgeFalmer.
- Lambert, J. (2006). *Digital storytelling: Capturing lives, creating community*. Berkeley, CA: Digital Diner Press.
- Linn, X., Hmelo, C., Kinzer, C., & Secules, T. (1999). Designing technology to support reflection. *Educational Technology Research and Development*, 47(3), 43–62.
- McDrury, J., & Alterio, M. (2001). Achieving reflective learning using storytelling pathways. *Innovations in Educational and Teaching International*, 38(1), 63–73.
- McDrury, J., & Alterio, M. (2002). *Learning through storytelling in higher education*. London: Kogan Page.
- McVee, M. (2004). Narrative and the exploration of culture in teachers' discussions of literacy, identity, self, and other. *Teaching and Teacher Education*, 20, 881–899.
- Merriam, S., (Ed). (2002). *Qualitative research in practice: Examples for discussion and analysis*. San Francisco: Jossey-Bass.

- Meuller, A., & Skamp, K. (2003). Teacher candidates talk: Listen to the unsteady beat of learning to teach. *Journal of Teacher Education*, 54(5), 428–440.
- Norton-Meier, L., & Drake, C. (2008). When third space is more than the library: The complexities of theorizing and learning to use family and community resources to teach elementary literacy and mathematics. *Oxford University Research Archive*. Retrieved online on May 30, 2008, from <http://ora.ouls.ox.ac.uk/objects/uuid:9a42bbba-d03a-4a1e-9258-d9a0286bb91c>.
- Norton-Meier, L. (2006). C.I. 377: *The teaching of reading and language arts in the primary grades, Fall 2006*. Course syllabus. Iowa State University.
- Ohler, J. (2008). *Digital storytelling in the classroom: New media pathways to literacy, learning and creativity*. Thousand Oaks, CA: Corwin Press.
- Paull, C. (2002). *Self-perceptions and social connections: Empowerment through digital storytelling in adult education*. Doctoral dissertation, University of California: Berkeley.
- Posner, G. (2005). *Field Experiences: A guide to reflective teaching (6th ed.)*. New York: Allyn and Bacon.
- Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon*, 9(5), 1–6.
- Reed-Danahay, D. (2002). Turning points in textural strategies in ethnographic writing. *Qualitative Studies in Education*, 15(4), 421–425.
- Rodgers, C. (2002). Defining reflection: Another look at John Dewey and reflective thinking. *Teachers College Record*. Columbia, NY: Teachers College.
- Rushton, S. (2004). Using narrative inquiry to understand a student-teacher's practical knowledge while teaching in an inner-city school. *The Urban Review*, 36(1), 61–79.

- Schön, D. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions*. San Francisco: Jossey-Bass.
- Tendero, (2006). Facing versions of the self: The effects of digital storytelling on English education. *Contemporary Issues in Technology and Teacher Education*, 6(2), 174–194.
- Thompson, A., Schmidt, D., & Stewart, E. (2000). Technology collaboratives for simultaneous renewal in K-12 schools and teacher education programs. *Council of Chief State School Officers, 2000 State Educational Technology Conference Papers*, 55–72.
- Trueba, E. (1999). Critical ethnography and a Vygotskian pedagogy of hope: The empowerment of Mexican migrant children. *Qualitative Studies in Education*, 12(6), 591–614.
- Ugoretz, J. (2006). Making meaning from meaning making: Digital stories in teacher education and the liberal arts. In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2006*. (pp. 737–741). Chesapeake, VA: AACE.

CHAPTER 5. GENERAL SUMMARY

Digital storytelling, the use of digital media such as images, movies, audio, music and narrative, has been used in classrooms around the nation with enthusiasm for its abilities to motivate and engage learners (Behmer, Schmidt, & Schmidt, 2006; Hall & Hudson, 2006; Hofer & Swan, 2006). Within pre-service teacher education, digital storytelling has been met with excitement as a tool to support the development of reflective practice (Barrett, 2006; Kim, 2006; Tendero, 2006). As university teacher education programs welcome more and more digital natives to their classrooms, the need to be prepared to meet the expectations of digital learners by utilizing the tools that they have grown up with becomes evident.

This dissertation examined using digital storytelling as a tool for reflection with special emphasis on the existing literature, possible research methodologies for understanding its use, and its potential as a strategy for fostering reflection among pre-service teachers. From the literature review article in Chapter 2, "Using Digital Storytelling in Education: Five Emerging Genres," we find that several distinct genres have emerged from using digital storytelling in educational settings at all levels. Chapter 3, "Narrative Inquiry: A Methodology for Examining Reflection in Digital Stories," we explored using narrative inquiry as a methodology based on storytelling to analyze pre-service teachers' narratives. This chapter defined the process of using narrative inquiry while analyzing pre-service teacher's stories that included a comprehensive reflective digital story. The next chapter, Chapter 4, "Digital Storytelling and its Role in the Development of Reflective Practice: Examining the Stories of Three Pre-service Teachers," reported the results of a study that examined the role of digital storytelling as a tool that supports the development of reflective practice. Digital storytelling can serve as a tool for organization as well as an activity that is

scaffolding to support the development of reflective practice among pre-service teachers at various levels of the reflective practice continuum.

Key Findings from the Dissertation

Chapter 2 provided a review of the literature surrounding the use of digital storytelling in education. After summarizing the literature, it became evident that distinct genres were beginning to emerge from the field of education. It appeared digital stories were no longer being framed exclusively by Lambert's (2007) seven elements of story, but were branching out to meet the needs of educators in the field. Lambert's work remains the staple in digital storytelling and traditional digital stories remain a strong genre within education. More recently, however, educators have begun using digital storytelling for purposes that meet the needs of their students that also include digital stories of learning, project-based digital stories, digital stories of social justice and culture, and digital stories of personal reflection. As the research in this field grows, the potential for additional genres remains strong. The review of the literature also revealed a lack of research in the area focusing on student learning outcomes resulting from using the digital storytelling process in classrooms. Schrum et al. (2005) outlined standards for research in educational technology and call for research that examines student learning. Although the studies are beginning to develop, rigorous research is needed in order to define the benefits and possibilities of using digital storytelling in the classrooms.

Chapter 3 examined a methodology for analyzing learner narratives, in the case of this dissertation, pre-service teachers. Interpretive research methodology was used to determine possible research methods that would fit with the focus on pre-service teacher reflection and digital storytelling. Ethnography was selected in order to gather a rich

description of the culture surrounding the K-3 literacy methods course. Narrative inquiry was used to examine and understand the development of reflective practice of three pre-service teachers. It also provided a framework for analyzing the use of digital storytelling for reflective practice. This chapter focuses on the process of narrative inquiry and gives specific examples that clarify the analytical process involved with viewing narratives from multiple lenses. Following McCormack's (2000) framework for carrying out narrative inquiry, this chapter provides an example of how narrative inquiry analysis is done and the recursive methods that are involved in such an analysis.

Chapter 4 provided an in-depth look at the reflective learning process of three pre-service teachers during their K-3 literacy methods course and practicum experience. As learners, each pre-service teacher came to the university teacher education course with their own unique set of prior knowledge and experiences about teaching and what it means to teach. Their stories gave interesting insight into how teacher education programs can scaffold reflective learning activities, so that they better meet the needs of all learners, not just the ones ready to think at a meta-cognitive level. Furthermore, the study shed light on the process involved in using digital storytelling as a tool for reflective practice. Important implications were revealed surrounding the necessity of supporting and scaffolding the storytelling structure within the digital storytelling process. Without support from peers and professionals engaged in the reflective process, pre-service teachers resorted to completing the digital story as just another assignment and the reflective component was not viewed as an exercise in a problem solving and reflective thought.

Recommendations for Future Research

This dissertation focused on understanding digital storytelling and its use in education, specifically with pre-service teachers as a process that supports the development of reflective practice. Results revealed that the actual storytelling process is one key to successfully using digital storytelling as a tool for reflection. Increased emphasis is needed for learners to take more time to develop their stories while receiving feedback from peers and instructors. Studies that explore possible strategies for scaffolding the development of story during the digital storytelling process would help to identify ways that pre-service teachers gain the necessary skills for them to become reflective practitioners.

Chapter 4 focused on three pre-service teachers in order to understand the development of reflective practice. It would be helpful to follow these pre-service teachers in a longitudinal study that used the same methodology, ethnography and narrative inquiry, and to continue the stories that began in this study. Future research that follows pre-service teachers from their first practicum experiences and classes through student teaching and the first years in the classroom, would provide valuable data for teacher education programs about the process of developing strategies that support reflective practice.

Digital storytelling is clearly a process that holds promise in the field of education at all levels. Considerable research needs to be conducted in this area to understand its impact and potential as a tool for learning and reflection. In discussing dialogue, McDrury and Alterio (2002) pointed to its importance: “Dialogue is the process of working with stories, to enable critique of practice and identifications of implications for practice” (p. 128). The importance of keeping the dialogue focused and rigorous when examining the potential for

using digital storytelling in education is vital to meeting the needs of learners entering our classrooms as digital natives.

References

- Armstrong, S. (Ed). (2003). *Snapshots! Educational insights from the Thornburg Center*.
Lake Barrington, Illinois: The Thornburg Center.
- Barrett, H. (2006). Researching and evaluating digital storytelling as a deep learning tool. In
C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and
Teacher Education International Conference 2006*, (pp. 647–654). Chesapeake, VA:
AACE. Retrieved from
<http://electronicportfolios.org/portfolios/SITESTorytelling2006.pdf>.
- Behmer, S., Schmidt, D., & Schmidt, J. (2006). Everyone has a story to tell: Examining
digital storytelling in the classroom. In C. Crawford et al. (Eds.), *Proceedings of
Society for Information Technology and Teacher Education International Convergence
2006*, (pp. 655–662). Chesapeake, VA: AACE.
- Bruner, J. (1986). *Actual minds, possible worlds*. Cambridge, MA: Harvard
University Press.
- Dewey, J. (1944). *Democracy and education*. New York: The Free Press.
- Dupain, M., & Maquire, L. (2005). Digital storybook projects 101: How to create and
implement digital storytelling into your curriculum. *21st Annual Conference on
Distance Teaching and Learning*. The Board of Regents of the University of
Wisconsin System. Retrieved on April 2, 2007 from
http://www.uwex.edu/disted/conference/Resource_library/proceedings/05_2012.pdf.
- Hall, L., & Hudson, R. (2006). Cross-curricular connections: Video production in a K-8
teacher preparation program. *Contemporary Issues in Technology and Teacher*

- Education* [Online Serial], 6(3). Retrieved from
<http://www.citejournal.org/vol6/iss3/currentpractice/article1.cfm>
- Hofer, M., & Swan, K. (2005). Digital moviemaking: The harmonization of technology, pedagogy and content. *International Journal of Technology in Teaching and Learning*, 1(2), 102–110.
- Kim, H. (2006). How do we change pre-service teachers' perceptions of scientists using digital storytelling? In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2006*, (pp. 689–691). Chesapeake, VA: AACE.
- Lambert, J. (2002, 2007). *Digital storytelling: Capturing lives, creating community*. Berkeley, CA: Digital Diner Press.
- Prensky, M. (2005). Listen to the natives. *Educational Leadership*. 63(4). 8-13.
- McDrury, J., & Alterio, M. (2002). *Learning through storytelling in higher education*. London: Kogan Page.
- Tendero, A. (2006). Facing versions of the self: The effects of digital storytelling on English education. *Contemporary Issues in Technology and Teacher Education* [Online Serial], 6(2). Retrieved from
<http://www.citejournal.org/vol6/iss2/languagearts/article2.cfm>

APPENDIX A

Title of Study: Examining digital storytelling as a means of reflective practice for pre-service teacher education students.
Investigators: Cynthia M. Garrety

Interview Guiding Questions:**Interview One:**

(to be conducted the week before the first practicum experience)

1. How are you feeling in anticipation of your first visit to your assigned classroom?
2. What are you looking forward to during this experience?
3. What do you feel will be the most challenging aspect of your practicum experience?
4. Do you have any doubts or concerns about your upcoming practicum experience?
5. What is your greatest fear about teaching?

Interview Two:

(to be conducted four weeks into the study after initial classroom practicum)

1. Tell me about your background and your decision to go into the teaching profession.
2. How would you describe your teaching philosophy?
3. Describe your ideal classroom.
4. Describe one of your favorite teachers. Why did this individual have an impact on you.
5. Tell me a story about one of your experiences in the classroom from your teacher perspective.

Interview Three:

(to be conducted during the practicum experience)

1. What has been the most surprising experience in the classroom?
2. What has been the most challenging experience?
3. What has happened in the classroom that caused you to stop and think about your beliefs about teaching and learning?
4. Tell me a learning story, a teacher story from your recent practicum experience.
5. How has this experience impacted who you are as a teacher?

Interview Four:

(to be conducted following the practicum experience)

1. What have you learned about yourself as a teacher?
2. What skills did you find yourself using that you don't remember being 'taught' in your undergraduate education?
3. Where do you feel you learned those skills?
4. Describe yourself as a teacher in the classroom?

5. Describe your ideal classroom?
6. What is your greatest fear about becoming a teacher?

Interview Five:

(to be conducted after construction of the digital story and the final exam)

1. What have you learned about yourself during this semester?
2. How do you see yourself as a teacher?
3. Please describe your philosophy of learning and teaching?
4. How did the construction of your digital story impact your learning this semester?
5. Did images help you reflect on experiences in the classroom in a meaningful manner? Explain.
6. Did constructing a story related to your learning impact your experience in this class? Explain.

Focus Group:

(after the final practicum experience and construction of the digital stories)

1. Please tell me about the digital story assignment in this class and how it may or may not have affected your learning or practice in the classroom
2. How did your participations in the interviews help or hinder your story construction?
3. What did you learn about your expectations surrounding the classroom practicum experience?
4. How do you feel this course will affect your future as a teacher?
5. Tell me about the kind of teacher you want to be?

APPENDIX B

INFORMED CONSENT DOCUMENT

Title of Study: **Examining digital storytelling as a means of reflective practice for pre-service teacher education students.**
Investigators: **Cynthia M. Garrety**

This is a research study. Please take your time in deciding if you would like to participate. Please feel free to ask questions at any time.

INTRODUCTION

The purpose of this study is to examine the use of digital storytelling as a means of reflective practice in pre-service teacher education students. You are being invited to participate in this study because you are a registered student of Curriculum and Instruction 377, The Teaching of Reading and Language Arts in the Primary Grades (K-3).

DESCRIPTION OF PROCEDURES

If you agree to participate in this study, your participation will last for one semester, consisting of four interviews lasting approximately 30 minutes in length and one focus group interview lasting approximately 45- 60 minutes. During the study you may expect the following study procedures to be followed. You will be contacted during the first two weeks of the class for your first interview, subsequent interviews will follow during the remainder of the class with the final interview scheduled after completion of the course. You will be asked to participate in informal observation sessions over the course of the study during your regular class hours and practicum experiences. These observations and interviews could involve audio recording and digital still pictures by the researcher. All audio and digital images will be erased as of September 01, 2007.

Participants may skip any question in the interview that makes them feel uncomfortable and will have the opportunity to read through the transcripts of the interviews to correct misconceptions or errors. Participants may also ask that any observation be stopped at any time during the study.

RISKS

There are no known risks to completion of the interviews or participation in the observation sessions other than that of routine and daily activities. You will not be identified individually at any time during participation in or completion of this research investigation. The data collection and analysis therefore does not increase the risk of loss of confidentiality because the participants will not be identified in the research study. Individuals and organizations

will never identified by name. Pseudonyms will be created and agreed upon by individual research subjects and used to protect individual and group identity.

The potential risk of manipulating data to obtain desired results and/or inadvertently identifying subjects while quoting them leading to embarrassment/ or loss of face is present. However, risks will be minimized by:

- 1) making the subjects aware of the context and procedures before and during the study
- 2) acquiring subjects' signed consent to record their thoughts and to quote them before the study
- 3) member checks- subjects will have the opportunity to verify the observations and conclusions drawn by the primary researcher after the first draft
- 4) care will be taken to maintain subjects' anonymity; their names will be replaced by codes and the tapes will be erased once the study is completed and the thesis is submitted
- 5) subjects may withdraw from the study at any time and data obtained from them will be deleted

BENEFITS

A benefit is defined as a "desired outcome or advantage." It is hoped that the information gained in this study will benefit society and individuals by increasing the body of knowledge in the area of reflective practice and the use of digital storytelling in the undergraduate classroom.

COSTS AND COMPENSATION

You will not have any costs from participating in this study. You will not be compensated for participating in this study.

PARTICIPANT RIGHTS

Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide to not participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled. Data from participants who withdraw will be deleted from the data selection for analysis.

CONFIDENTIALITY

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information.

To ensure confidentiality to the extent permitted by law, the following measures will be taken. The names of participants will not be used, but observations will be coded for data analysis. As far as is practical you will not be identified in any publication without your permission. You may also request your own personal data for your own research purposes. If the results are published, your identity will remain confidential.

Data for this research investigation will be stored on the principal investigator's computer and any other access to the files is password protected. Only those with permission can access the data (i.e. the researcher and supervisors). September 01, 2007 is the anticipated date that the identifiers will be removed from the completed survey instruments.

QUESTIONS OR PROBLEMS

You are encouraged to ask questions at any time during this study.

- For further information about the study contact Cynthia Garrety at 515-351-7359 or 515-294-1694; cgarrety@iastate.edu, or her major professor Denise Schmidt at 515-294-9141; dschmidt@iastate.edu.
- If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, austingr@iastate.edu, or Diane Ament, Director, Office of Research Assurances (515) 294-3115, dament@iastate.edu.

PARTICIPANT SIGNATURE

Your signature indicates that you voluntarily agree to participate in this study, that the study has been explained to you, that you have been given the time to read the document and that your questions have been satisfactorily answered. You will receive a copy of the written informed consent prior to your participation in the study.

Participant's Name (printed) _____

(Participant's Signature)

(Date)

INVESTIGATOR STATEMENT

I certify that the participant has been given adequate time to read and learn about the study and all of their questions have been answered. It is my opinion that the participant

understands the purpose, risks, benefits and the procedures that will be followed in this study and has voluntarily agreed to participate.

(Signature of Person Obtaining
Informed Consent)

(Date)

APPENDIX C

| | | |
|---|-----------------------------------|-------------|
| Review Date: <u>12 August 2006</u> | IRB ID: <u>06-355</u> | IRB |
| Approval Date: <u>12 August 2006</u> | Length of Approval: <u>1 year</u> | JUL 24 2006 |
| Approval Expiration Date: <u>11 August 2007</u> | FULL Committee Review: <u> </u> | |
| EXEMPT per 45 CFR 46.101(b) <u> </u> Date: <u> </u> | Minimal Risk: <u> </u> | |
| EXPEDITED per 45 CFR 46.110(b) <u> </u> | More than Minimal Risk: <u> </u> | |
| Category: <u>6 & 7</u> , Letter <u> </u> | Project Closed Date: <u> </u> | |

ISU NEW HUMAN SUBJECTS REVIEW FORM

SECTION I: GENERAL INFORMATION

| | | |
|---|--|----------------|
| Principal Investigator (PI): Cynthia Garrety | Phone: 515-351-7359 | Fax: <u> </u> |
| Degrees: B.S., M.S. | Correspondence Address: W081 Lagomarcino | |
| Department: Curriculum and Instruction | Email Address: cgarrety@iastate.edu | |
| Center/Institute: Center for Technology in Learning and Teaching | College: Human Sciences | |
| PI Level: <input type="checkbox"/> Faculty <input type="checkbox"/> Staff <input type="checkbox"/> Postdoctoral <input checked="" type="checkbox"/> Graduate Student <input type="checkbox"/> Undergraduate Student | | |

Title of Project: Examining digital storytelling as a means of reflective practice for pre-service teacher education students

Project Period (Include Start and End Date): [mm/dd/yy][08/21/2006] to [mm/yy/dd][09/01/2007]

FOR STUDENT PROJECTS

| | |
|---|--|
| Name of Major Professor/Supervising Faculty: Denise Schmidt | Signature of Major Professor/Supervising Faculty: <u>[Signature]</u> |
| Phone: 515-294-9141 | Campus Address: W031 Lagomarcino |
| Department: Curriculum and Instruction | Email Address: dschmidt@iastate.edu |
| Type of Project: (check all that apply) | |
| <input checked="" type="checkbox"/> Research | <input type="checkbox"/> Thesis |
| <input type="checkbox"/> Independent Study (490, 590, Honors project) | <input checked="" type="checkbox"/> Dissertation |
| | <input type="checkbox"/> Class project |
| | <input type="checkbox"/> Other. Please specify: <u> </u> |

KEY PERSONNEL

List all members and relevant experience of the project personnel. This information is intended to inform the committee of the training and background related to the specific procedures that the each person will perform on the project

| NAME & DEGREE(S) | SPECIFIC DUTIES ON PROJECT | TRAINING & EXPERIENCE RELATED TO PROCEDURES PERFORMED, DATE OF TRAINING |
|----------------------|----------------------------|---|
| Cynthia Garrety M.S. | Primary Investigator | ISU Human Subjects Training June 09, 2003 <u> </u> |
| Denise Schmidt Ph.D. | Major Professor | ISU Human Subjects Training August 2000 <u>7/20/2000</u> <u> </u> |
| | | |
| | | |

Add New Row

FUNDING INFORMATION

SECTION III: ENVIRONMENTAL HEALTH AND SAFETY INFORMATION (EH&S)

- ☐ Yes ☒ No Does this project involve laboratory chemicals, human cell lines or tissue culture (primary OR immortalized), or human blood components, body fluid or tissues? If the answer is "no" is checked you will automatically move to a question regarding the involvement of human research participants in your project.

ASSURANCE

- I certify that the information provided in this application is complete and accurate and consistent with any proposal(s) submitted to external funding agencies.
- I agree to provide proper surveillance of this project to ensure that the rights and welfare of the human subject or welfare of animal subjects are protected. I will report any problems to the appropriate assurance review committee(s).
- I agree that I will not begin this project until receipt of official approval from all appropriate committee(s).
- I agree that modifications to the originally approved project will not take place without prior review and approval by the appropriate committee(s), and that all activities will be performed in accordance with all applicable federal, state, local and Iowa State University policies.

CONFLICT OF INTEREST

A conflict of interest can be defined as a set of conditions in which an investigator's or key personnel's judgment regarding a project (including human or animal subject welfare, integrity of the research) may be influenced by a secondary interest (e.g., the proposed project and/or a relationship with the sponsor). ISU's Conflict of Interest Policy requires that investigators and key personnel disclose any significant financial interests or relationships that may present an actual or potential conflict of interest. By signing this form below, you are certifying that all members of the research team, including yourself, have read and understand ISU's Conflict of Interest policy as addressed by the ISU Faculty Handbook (<http://www.provost.iastate.edu/faculty> .) and have made all required disclosures.

- ☐ Yes ☒ No Do you or any member of your research team have an actual or potential conflict of interest?
☐ Yes ☐ No If yes, have the appropriate disclosure form(s) been completed?

SIGNATURES

Signature of Principal Investigator

Signature of Department Chair

Date

Date

7-24-06

7/24/06

PLEASE NOTE: Any changes to an approved protocol must be submitted to the appropriate committee(s) before the changes may be implemented.

Please proceed to SECTION II.

Modification Approval Date _____
 Continuing Review Approval Date August 21, 2007
 Approval Expiration Date: August 20, 2008

IRB
 AUG 10 2007

ISU HUMAN SUBJECTS CONTINUING REVIEW AND/OR MODIFICATION FORM

TYPE OF SUBMISSION: ☒ Continuing Review ☐ Modification ☐ Continuing Review and Modification

| | | |
|--|---|---------------------|
| Principal Investigator: Cynthia M. Garrety | | Phone: 515-351-7359 |
| Degree: B.S., M.S. | Correspondence Address: N031 Lagomarcino | |
| Department: Curriculum and Instruction | E-mail Address: cgarrety@iastate.edu | |
| Project Title: Examining digital storytelling as a means of reflective practice for pre-service teacher education students | | |
| IRB ID: 06-355 | Date of Last Continuing Review: August 11, 2007 | |
| IF STUDENT PROJECT | | |
| Name of Major Professor: Denise Schmidt | Phone: 515-294-9141 | |
| Department: Curriculum and Instruction | Campus Address: N031 Lagomarcino | |
| | E-mail Address: dschmidt@iastate.edu | |

ORIGINAL

FUNDING INFORMATION:

| | |
|--|--|
| <input type="checkbox"/> External Grant/Contract | <input type="checkbox"/> Internal Support (no specific funding source) or Internal Grant (indicate name below) |
| Name of Funding Source: | OSPA Record ID on Gold Sheet: |
| <input type="checkbox"/> Part of Training, Center, Program Project Grant - Director: | Overall IRB ID No: |

CONFLICT OF INTEREST

The proposed project or relationship with the sponsor require the disclosure of significant financial interests that present an actual or potential conflict of interest for investigators involved with this project. By signing this form, all investigators certify that they have read and understand ISU's Conflict of Interest policy as addressed by the ISU Faculty Handbook and made all disclosures required by it. (<http://www.provost.iastate.edu/faculty>.)

Do you or any member of your research team have a conflict of interest? ☐ Yes ☒ No
 If yes, has the appropriate disclosure form been completed? ☐ Yes ☐ No

ASSURANCE

I certify that the information provided in this application is complete and accurate and consistent with proposal(s) submitted to external funding agencies. I agree to provide proper surveillance of this project to insure that the rights and welfare of the human subjects are protected. I will report any adverse reactions to the IRB for review. I agree that modifications to the originally approved project will not take place without prior review and approval by the Institutional Review Board, and that all activities will be performed in accordance with state and federal regulations and the Iowa State University Federal Wide Assurance.

Signature of Principal Investigator _____ Date 8-9-2007

Student Projects: Faculty signature indicates that this application has been reviewed and is recommended for IRB review.

| | | | |
|---|---------------------|--|------------|
| Signature of Supervising Faculty _____ | Date <u>8-09-07</u> | IRB Approval Signature <u>Kenny A. Agnieszka</u> | Date _____ |
| EXPEDITED per 45 CFR 46.110(b) <u>1</u> , Category <u>1, 7</u> , 1 letter _____ STUDY REMAINS EXEMPT per 45 CFR 46.101(b) _____ WAIVER of SIGNED CONSENT per 45 CFR 46.117(c) _____ WAIVER of ELEMENTS of Consent per 45 CFR 46.116 _____ VULNERABLE POPULATION per 45 CFR 46 _____ | | | |

APPENDIX D

CI ***

The Teaching of Reading & Language Arts in the Primary Grades Fall 2006

Section 3 (2066015)- Mondays/Wednesdays 8:00-10:30

We are about to embark on a collaborative teaching and learning adventure! The plan for this adventure will develop as we explore language and literacy in relation to children in the primary grades (Kindergarten-3rd Grade). We will investigate how to plan, implement, and evaluate language, literacy, and literature experiences in the classrooms to meet the needs of students intellectually, physically, socially and emotionally. I have extremely high expectations for you in this course! You will be writing your own personal objectives during the first week of class. My objectives are that you will . . .

- develop as a professional through engagement in class discussions and assignments.
- feel confident in your ability to assess literacy development and plan related appropriate instructional activities for K-3 students.
- develop and be able to articulate a personal philosophy regarding the teaching of language and literacy and how it relates to all areas of curriculum development.
- understand reading and writing as transactional processes.
- examine the ways readers interact with texts and each other to make meaning while reading, discussing, and writing texts.
- become a reflective practitioner by thinking critically about shared class experiences and connecting course material to your personal experiences.
- come to view diversity among children as an asset and to view children from a strength orientation.
- develop a stronger understanding of your own culture and the culture of others.
- actively contribute to the learning community by working collaboratively and professionally with others.

Catalog Description: CI *** addresses the theories and processes of literacy in grades kindergarten through third grade.

Course Objectives:

When working on theme studies with elementary age students, we have always worked together from the very first day to identify our big questions. In other words, at the end of our investigation, what is it we REALLY want to know? Since this is a course in reading/language arts methods, I believe we have two big questions:

- 1) How do children learn to read, write, speak, listen, visualize, and enact?
- 2) How am I going to teach children to become independent readers, writers, and overall language users?

These two questions will be the focus of our semester-long investigation.

In addition to these two big questions, the content of CI 377 addresses each of the 10 State of Iowa Teacher Education Standards in varying degrees. The following standards are targeted most directly and can be measured by a variety of assessments including a midterm and final conference as well as a literacy portfolio that will demonstrate the student's developing knowledge about early literacy development and the young child. Specific **Designated Performance Indicators** are noted where appropriate.

.....

STANDARD I: STUDENT LEARNING

The practitioner understands how students learn and develop, and provides learning opportunities that support intellectual, career, social, and personal development.

Related course objective: The practitioner will . . .

- recognize the progressive stages young children go through as they learn to read and write.
- explore and make instructional decisions about the elementary teacher's role as the coordinator of the learning environment and as the manager of all language arts and reading instruction, supported by research in the field.
- investigate a variety of ways to involve parents with their child's literacy learning.

Standard Assessment: Literacy Investigations, Reflections on Class Learning, Midterm/Final Conferences.

.....

STANDARD II: DIVERSE LEARNERS

The practitioner understands how students differ in their approaches to learning and creates instructional opportunities that are equitable and are adaptable to diverse learners.

Related course objective: The practitioner . . .

- will acquire knowledge about teaching and/or intervention strategies to use with diverse learners including English language learners and/or at-risk learners.
- demonstrates the belief that a teacher can make a difference in every child's literacy development and life.

Standard Assessment: Literacy Investigations, Lesson Plans, Midterm/Final Conferences.

.....

STANDARD III: INSTRUCTIONAL PLANNING

The practitioner plans instruction based upon knowledge of subject matter, students, the community, curriculum goals, and state curriculum models.

Related course objective: The practitioner . . .

- will explain various theoretical reading/writing models and the resulting research-based instructional implications for both language arts and related content areas.
- will effectively analyze and select print and non-print resources appropriate for primary reading and writing across the curriculum.
- Understands and discusses how spelling, grammar and handwriting are important tools of writing.

Standard Assessment: Literacy Investigations, Field Challenges, Midterm/Final conferences, Final Portfolio (Digital Story)

Designated Performance Indicator: Field Challenges 1 (child case study) and 2 (reflective lesson plan)

.....

STANDARD IV: INSTRUCTIONAL STRATEGIES

The practitioner understands and uses a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.

Related course objective: The practitioner will

.....

- evaluate and modify basal lesson plans to meet the needs of diverse learners.
- recognize that there is no one best way to teach reading and writing, demonstrating knowledge of a number of possible strategies to meet learners' needs.
- promote oral expression through the use of poetry, creative drama activities, and storytelling.
- be familiar with a variety of children's literature and understand how it can be integrated across the curriculum to facilitate learning.
- identify and implement reading and writing strategies that are appropriate to build content area skills.

Standard Assessment: Literacy Investigations, Field Challenges (lesson plan), Midterm/Final conference.

Designated Performance Indicator: Field Challenges 1 (child case study) and 2 (reflective lesson plan)

.....

STANDARD VII: ASSESSMENT

The practitioner understands and uses formal assessment strategies to evaluate the continuous intellectual, social, and physical development of the learner.

Related course objective:

The practitioner will be familiar with and be able to administer and interpret a number of monitoring and assessment tools, both formal and anecdotal in nature.

Standard Assessment: Midterm/Final Conferences, Literacy Investigations, Field Challenges

Designated Performance Indicator: Field Challenge 1 (Child case study with running record)

.....

STANDARD X: COMPUTER TECHNOLOGY RELATED TO INSTRUCTION

The practitioner uses computer technology to enhance student learning.

Related course objective: The practitioner will . . .

- be knowledgeable about and be able to plan for the integration of various ways technology can be integrated across the curriculum.
- will demonstrate familiarity with the use of the Internet for teacher support and professional development opportunities.

Standard Assessment: Use of WebCT, Literacy Investigations, Field Challenges, Digital Story Final Reflection

.....

Course Structure:

Lectures, demonstrations, discussions, small group interactions, hands-on literacy experiences, interactive technology, and personal reflections are planned for this course.

Required Texts:

A variety of journal articles, brochures, selections of children's literature, newspaper articles, poetry, and multimedia selections will be used in this course and will be made available to student's through WebCT. **Required** professional reading is listed below and is available at the University Book Store in the Memorial Union.

- Fox, M. (2001). Reading Magic: Why reading aloud to our children will change their lives forever. San Diego, CA: Harcourt.
- Ray, K. W. (2004). About the authors: Writing workshop with our youngest writers. Portsmouth, NH: Heinemann.
- Miller, D. (2002). Reading with meaning: Teaching comprehension in the primary grades. York, ME: Stenhouse.
- Owocki, G. & Goodman, Y. (2002). Kidwatching: Documenting children's literacy development. Portsmouth, NH: Heinemann.

Course Requirements and Expectations:

Attendance. Regular attendance is absolutely essential in this course. Class sessions will be dynamic and generative, so "getting the notes" will not replace the experience. Often, your peers will be counting on your participation and preparation. Please call or email Lori when you will not be able to attend class. **Absences and tardiness will be taken into account in the final grading process.** After a student's third absence, a conference with Lori is required to assess the situation, determine if course content and student learning is at risk, and to determine if it is in the student's best interest to drop the course. Note that after two absences, a grade of A is no longer possible in this course.

Participation: Participation is mandatory in this course! Students are expected to be enthusiastic, prepared, supportive of peers, and ready to learn. A variety of in class engagements, strategies, and activities will allow students to actively explore topics related to literacy development and teaching children to read, write, speak, listen, enact and visualize. The importance of each student being prepared to learn and engage actively in class cannot be overstated. Often times, artifacts will be collected in class as evidence of student learning. These artifacts may be a journal reflection, a graphic organizer completed in class, an interview of a classmate, or the like.

Professionalism: Professionalism is of the utmost importance as you continue your journey into teaching. It is the expectation that all students will arrive on time, be prepared to learn, contribute to discussions, ask questions to learn, and support the learning of each and every member of our learning community. Furthermore, it is expected that all students will be enthusiastic because this is the work and play of teachers!!! On all assignments, examinations, or other coursework undertaken by students in this class, the following pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." Plagiarism and cheating are serious offenses and may be punished by failure on the investigation, paper, project; failure in the course; and/or expulsion from the university.

Class Committees: Engaged participation, not just attendance, is essential to building community and developing a sense of student ownership in a classroom. Each student will choose a committee to help build our classroom community and keep it running smoothly.

Information Resource Committee - Keeps class informed of current events, websites, teacher and book news, keeps a

bibliography of books read.

Publications Committee - Designs and enables the publication of the creative writing anthology and memory book.

Executive Committee - Works with Lori to meet the needs of the class, documents attendance, acts a substitute student for

those who are absent.

Environment Committee - Personalizes the classroom, clean up after class, return room to previous arrangement.

Social/Morale Committee - Arranges food, quotes on the board, plans for special events (author's tea, final meeting)

Book Order Committee - Hands out book orders, collects money, places orders, hands out books, determines service project with book points.

Literacy Investigations: The Literacy Investigation is an opportunity for students to actively engage with a variety of texts and to act as investigators as they inquire, asking questions about how one learns, becomes literate, and how teachers facilitate learning on a child's path to literacy. Learning to read, write, and talk is an ACTIVE process so students will be asked to read, write, do, interview, question, explore, create and most importantly . . . to THINK about the topics presented.

We know that readers need CHOICE so I have designed a semester filled with a variety of readings that will give each student the opportunity to read from a variety of types of texts that have been written by a variety of authors. Texts chosen have been written by children, by teachers, by parents, and by key researchers and philosophers in the area of reading and literacy education. Many of the readings chosen are selected from the professional literature that teachers read. These texts have been selected purposely to help students make the transition from textbook learning to the lifelong reading that is teacher work including professional literature. Reading is only one part of each investigation and each investigation is uniquely designed specifically to meet the needs of each group of students. At the conclusion of each literacy investigation, each student will be asked to create a reflection to be posted on her/his WebCT Gold blog related to his/her learning throughout the investigation. More details about how to create these blogs will be given in class.

Pen Pal Letters: Each student will have the opportunity to become a "pen pal" and develop a writing relationship with a second grade student over the semester. This experience provides the opportunity to analyze the writing development over time of one student as well as work on our own writing while supporting a young writer by giving him or her a real audience for writing.

Field Challenges: The field challenge is an extension of the literacy investigation but will occur during the practicum experience. Each field challenge is designed to help students make the connection from our in class learning to the work of the profession in the field. Many of the artifacts created from these challenges will be used for DPIs and will find a place in the student's literacy portfolio.

Literacy Portfolio: The literacy portfolio is our culminating assessment strategy that will be shared during our midterm and final conferences. Each literacy investigation will include an artifact to add to the literacy portfolio. More details will be shared at a later date about the specific contents of the portfolio but it will be expected that each student's portfolio will have a literacy past, present, and future.

Assessment Procedures:

Assessment, evaluation and accountability are “ever-present” issues in the field of education. We will explore issues of evaluation with children as well as for ourselves as learners. In the past, I have not assigned “points” or grades for separate assignments, but rather, we will demonstrate a variety of assessment strategies with each event. Theoretically, I believe and hope that my students will learn for the sake of learning and come to value your growth and development as becoming part of a professional community. Make note that students in this course must complete all assignments and course expectations or a grade of incomplete will be given until all work is completed. Although I do not give tests, I do ask that each student complete at least two self-evaluation reflections, have a midterm and final conference with me, and help me to determine your grade (with documented support) at the end of the semester.

Self-evaluations will give each student an opportunity to pause twice in your learning to complete two comprehensive reflections on your learning and to consider the grades you are earning and want to earn. The grade indicators that follow will provide grading guidelines (40% of the final grade will be determined by self-evaluation and 60% by Lori).

- A** Students demonstrate clear articulation of the required concepts/content of the course. Discussions and readings are ***synthesized and interpreted*** in assignments to show analytical relationships between theory and practice. Connections are made between K-3 classrooms, personal experiences, and this course. Professional development is indicated from the beginning to the end of the course at an individual level, including increased accurate use of reading and language arts ***terminology, references*** to professional readings in writing and discussion, and observable ***change in knowledge*** over time. Consistent, ***timely*** preparation and attendance, ***thoughtful*** contributions regularly made to discussions (large and/or small group) and ***observable*** engagement in ideas and activities. CI 377 is taken seriously as an essential part of teaching preparation.
- B** Students are inconsistently able to demonstrate understanding of required course concepts/content. Reflections and writing assignments ***cover*** a topic, ***report*** data without interpretation, connection or synthesis. In other words, readings are ***summarized***, rather than responded to and assignments are completed but not extended. There is less indication of change, growth, and development throughout the semester. Attendance is consistent and preparation is usually evident however ***attendance and participation alone do not indicate an “A.”*** Contributions are occasionally made to large and small group discussions.
- C** Students are unable to demonstrate understanding of required course concepts/content in writing or discussion. ***Minimal*** reflection and thin writing are evident in assignments, both in length and quality. ***Lack*** of professional change occurs over the course of the semester. Preparation and attendance are ***inconsistent***, few contributions are made to small and large group discussions, and engagement in the ideas and activities of the course is ***not observable***.

A note about the assessment of DPIs . . .

The Designated Performance Indicator (DPI) has become an assessment system that is used across our teacher education program to mark a student’s progress and learning throughout the professional program. For this course, a lesson plan and a child case study, which will be part of the field challenge assignment, have been identified as DPIs. These DPIs are to be rated acceptable, marginal, and unacceptable. In class, we will discuss and create a rubric for these artifacts. Please note that I will allow students to revise and resubmit any DPIs that are not acceptable up until the final day of the fall semester, 2006.

Accommodations

Any student with a disability who needs an accommodation or other assistance in this course should make an appointment to speak with me as soon as possible.

Diversity

My intention is that students from all diverse backgrounds and perspectives be well-served by this course and that students' diversity be viewed as a resource and benefit to our collective learning. I also intend that diversity of K-3 students and notions of sociopolitical equality are central issues in the course. Disagreement is a part of life. We must understand that there are times when we will disagree, but we will not intentionally humiliate, intimidate, or embarrass each other. If I unintentionally do so, I will apologize. Nonverbal gestures also communicate messages that can humiliate, intimidate, or embarrass people. Please inform me of how I might improve the effectiveness of the course for you personally or for other students or student groups.

APPENDIX E

| DATE | TO DO IN CLASSROOM | NOTES |
|------------------------------------|--|--|
| Monday, 9/11 2 hours | Observe or work with individual students Interest Inventory | Identify literacy/math classroom resources |
| Monday, 9/18 2 hours | Read Aloud to class or small group Engage with individual/small group during instruction | Available to work with individuals or small groups as needed |
| Monday, 9/25 2 hours | Literacy Interview (1 or 2 students) | Available to work with individuals or small groups as needed |
| Wednesday, 10/4 2 hours | Literacy Assessments (1 or 2 students) Math Interview #1 (1 or 2 students) | Available to work with individuals or small groups as needed |
| Monday, 10/9 2 hours | Teach reading, writing, or math lesson | Small group or whole class for lessons |
| Monday, 10/16 All Day | Teach reading, writing, or math lesson | Small group or whole class for lessons Available rest of day to work with students as needed |
| Wednesday, 10/18 All Day | Teach reading, writing, or math lesson Math Interview #2 (Can be completed any time after math lesson is taught) | Small group or whole class for lessons Available rest of day to work with students as needed |
| MOVE TO | SECOND BLOCK CLASSROOM | NEW GRADE LEVEL |
| Monday, 10/23 2 hours | Observe or work with individual students Interest Inventory | Identify literacy/math classroom resources |
| Wednesday, 10/25 2 hours | Read Aloud to class or small group Engage with individual/small group during instruction | Available to work with individuals or small groups as needed |
| Monday, 10/30 2 hours | Literacy Interview (1 or 2 students) Math Interview #1 (1 or 2 students) | Available to work with individuals or small groups as needed |
| Wednesday, 11/1 2 hours | Literacy Assessments (1 or 2 students) | Available to work with individuals or small groups as needed |
| Monday, 11/6 2 hours | Teach reading or writing lesson | Small group or whole class for lessons |
| Wednesday, 11/8 2 hours | Teach reading, writing, or math lesson | Small group or whole class for lessons |
| Monday, 11/13 All Day | Teach reading, writing, or math lesson | Small group or whole class for lessons Available rest of day to work with students |
| Tuesday, 11/14 5:00 – 9:00 p.m. | Family Literacy and Math Night Set up, run activities, clean up | Families @ ***s from 6:30 – 8:00 |

| | | |
|-----------------------------|--|---|
| Wednesday, 11/15 All Day | Teach reading, writing, or math lesson Math Interview #2 (Can be completed any time after math lesson is taught) | Small group or whole class for lessons Available rest of day to work with students |
|-----------------------------|--|---|

APPENDIX F

Fall 2006-CI ***

Final Conference with

Look at your digital story.

- Play time from 3-6 minutes. _____ Minimum of 5 artifacts _____
- Story must include . . . _____ audio _____ a visual _____ movement
- Theme must tell your unique story _____
- Free of print convention errors. _____

Question – What will literacy instruction look like in your classroom?

- ___ Children ___ Individual needs?
- ___ Talking
- ___ Enacting
- ___ Writing
- ___ Reading
- ___ Materials ___ Manipulation ___ Choice ___ Words ___ Support
- ___ Parents
- ___ Multiple Strategies
- ___ Phonics Instruction?
- ___ NCLB?
- ___ Cueing Systems
- ___ Play? ___ Expectations ___ Response ___ Trust/Responsibility ___ Immersion
- ___ Assessment – Kidwatching ___ Approximations ___ Demonstrations

Portfolio Additions

- _____ Field Challenge 1 - (Child case study)
- How will you use these ideas in your own classroom?
- What questions do you still have about assessment?
- _____ Field Challenge 2 - (Literacy Lesson Plan)
- What have you learned about lesson planning? What are the challenges?
- What are your continued goals for your teaching?
- _____ My Literacy Goals
- _____ My Philosophy
- _____ Inquiry Presentation Artifact and Reflection
- _____ Other evidence of learning – pen pal letter?
- _____ Revise your cover letter
- _____ Revise other items we mentioned in your midterm conference

What final grade do you give yourself and why (documented support)?

Attendance?

On-line book talks?

Pen Pal Visits and Letter(s)?

Final questions/comments/concerns:

We agree to a final grade of _____. Date _____

Student Signature _____

Lori's Signature _____