

The Emergent Properties of Multimedia Applications for Storytelling Pedagogy in a Distance Education Online Learning Community

Elizabeth Figa

This study analyzed pedagogical strategies for the use of multimedia technologies to teach storytelling via distance education to an online learning community. These strategies and technologies offer an alternate paradigm that moves away from text-based online learning to the more experiential-based instruction extant in real-time storytelling courses. The use of digital video recordings of storytelling performances was examined through analysis of discussion posts collected from students over a two-year timeline that revealed unexpected outcomes (emergent properties). The research suggests that there are value-added benefits in the use of multimedia and asynchronous individual/group learning experiences for teaching storytelling online. It also affirms a gap in online learning to experience the pleasures of real-time/live storytelling and the immediacy of the human communication feedback loop.

THE VIRTUALIZATION OF STORYTELLING

Academics have argued the definitions of *storytelling* for years. The television special *The Call of Story* (2003) addressed it in this way:

In a purest sense, many mediums such as novels and television, while they contain stories, are not seen in the same light as ‘storytelling’ which permits real-time/live storytellers the opportunity to morph and change their stories based on the reactions of story listeners.¹

This definition gives us a framework to understand new terms (often used interchangeably), such as *digital storytelling*, *virtual storytelling*, *interactive storytell-*

Address all correspondence to Elizabeth Figa, University of North Texas, School of Library and Information Sciences, Information Sciences Building, Room 205, PO Box 311068, Denton, TX 76203–1068. E-mail: efiga@lis.admin.unt.edu

ing, interactive fiction, interactive drama, and so on.² Definitions of these terms suffer a similar fate as that of *storytelling* in that they are endlessly argued about; nonetheless, they comprise a techno-rubric to represent traditional and new forms of storytelling and their use in online learning.

VIRTUAL COMMUNITIES AND ONLINE LEARNING ENVIRONMENTS

In recent years, a growing number of U.S. and international organizations, scholars, and businesses have advanced the transformation to the virtualization and digitization of storytelling (see Figa's "The Virtualization of Stories and Storytelling"). Part of the reason for this is the spread of modern communication technologies, which increasingly situate individual and interpersonal interactions in Internet and Web-based environments. This has enormous impact on individual experience and social networks.³ Communities are no longer limited to linkages by physical presence but instead are working, learning, and playing in virtual or cyber environments.⁴ These virtual communities⁵ that form in cyberspace create opportunities for the development of shared experiences and meaning making.

Distance education established its roots as a form of instruction at least 150 years ago as correspondence study.⁶ A paradigm shift has emerged from the traditional individually focused pedagogical model to new models that support dynamic shared relationships. These mediated e-learning communities are information systems laden with complexity, challenges, and benefits for alternative forms of instruction and course delivery,⁷ and they require huge technological and cost overheads for courseware development.⁸

In the early advent of cinematic storytelling technologies, Louis Lumpier is alleged to have said, "The cinema is an invention without a future."⁹ Surely, more than a few administrators and educators decried that online education was a technologic invention without a future as well. Presently, more and more formal degree programs and courses in higher education are being taught using Web-delivered technologies that form virtual classroom communities.¹⁰ Adult learners seek out this educational medium, online learning opportunities, and, universally, institutes of higher education are being forced to at least consider it as a competitive option. This educational model has its critics and supporters and is without question undergoing intense scrutiny as it becomes a source of research scholarship.¹¹

Asynchronous online teaching presents many pedagogical challenges, intricacies, and adaptive strategies to transform the best practices of traditional real-time teaching to these new environments. Classic research conducted by Treichler ("Are You Missing the Boat in Training Aids?") revealed that people retain 50% of the information they see and that body language and facial expressions represent about 55% of the information people interpret. The use of new media in online

learning is becoming a purposeful choice because of its power to communicate and display particular forms of information in familiar and often preferred formats that can simulate in-person-type learning activities.¹² A variety of commercial products are used to support online learning, as well as synchronous and asynchronous use. They feature a gamut of tools and infrastructure to facilitate the access and retrieval of lecture content, e-mail, and text-audio-video-based discussion forums. There are also many educational programs, organizations, and virtual communities using digital and virtual storytelling multimedia for teaching and entertainment purposes.

Digital image libraries, digital audio and video media, sound bites, and other forms of multimedia can help to meet the needs of various learning styles,¹³ as well as the cognitive styles and perceptions of users/students. Video is becoming the medium of choice for collecting images and sound for educational and social learning, according to Smith, Ruocco, and Jansen (“Digital Video in Education”), and for practical training, according to Pugh (“Using Music for Practical Training”). Video allows repeated observation of the same event and supports microanalysis and multidisciplinary analysis; it supports the construction of significant stories that tell and explain; and it can support grounded theory, whereby the emergence of new categories from source material is carefully disciplined.¹⁴ Digital media use has been evaluated as to gender and learning style impact and has been shown to be effective as exemplars and simulations that transcend teacher-student and teaching-learning perceptions. Last, technological advances in digital media servers, improvements in compression algorithms, and increased universal access to high-speed connectivity and high-speed multimedia Intranets are resulting in improved efficiency for the use of streaming media in Web environments.¹⁵ The Hilary McLellan and Roger B. Wyatt Website is a good starting point for exploration (<http://tech-head.com/>).

STORYTELLING AND MULTIMEDIA

A storytelling event comprises the story itself as well as the performance or oral narration to a listener or an audience. Multimedia recordings of a person’s telling a story archive not only the content of the story, but also the performance itself. Traditionally, we analyze the content of a story by analyzing a text document. In the case of a live (or real-time) storytelling performance, we analyze a spatiotemporal event that is much richer in information, ranging from sounds to gestures, facial cues, emotional communication, prosodics, and interactive responses in the performer-listener feedback loop.

The use of digital storytelling performances (defined as the digital recording of the storyteller and his or her performance of the story and, often, the text of the ora-

tion) in an online learning community allows for a different type of shared storytelling experience. Individual viewers do not have the immediacy of the real-time teller-listener feedback loop, yet there is a response process. The feedback loop of the real-time storytelling cycle is replaced by a response mechanism involving emotions of the listener felt in isolation. Although those emotions are not communicated back to the storyteller, in an online learning community or in a discussion forum, the listener/viewer can share personal responses to the digital-storytelling viewing experience with others to simulate the live response exchange. The community of listeners and viewers, as a collective mind, serves as a surrogate for the absent storyteller. The sharing of one's experience related to the recorded performance provides a sense of virtual reality, that is, a reality derived from sharing the impact of the story's content and the storytelling experience together. This is a common phenomenon in other interactive formats, such as discussion forms, blogs, online gaming, and so on, where interactors share cohesive group experiences, knowledge, and activities.

Whereas a person can reread a discussion post, revise a blog, or restart a game, it is the sharing process in the online learning community that enhances the virtual storytelling experience. The viewer can replay the performance, reflect on it, and continue the dialogue long after, something less so possible because of the ephemeral nature of a live performance or other forms of live events. Paradoxically, the ephemeral nature of the live storytelling performance, though seen as unique and unreplicable, is replaced in the case of the digital storytelling recording with the persistent object being retrievable and replayable. In a sense, digital storytelling or virtual storytelling transforms the unreplicable event of a live performance into a persistent object that becomes a reusable form of information.

John Miles Foley speaks about literary artifacts and challenges us to consider that "*canon* has come to designate a battle field, an intellectual fortress under siege, a primary site for cultural combat" (13), and he states that we must deconstruct the very notion of canon and reach beyond etymological limitations. He suggests that the "Internet with its links, built in context, and ever-emergent dynamics, offer both an analog to oral tradition and a blueprint" (30). He suggests that these emergent properties and dynamics serve as clear evidence that stories can transform from oral expression to print and other forms of media, including presentation on the Internet with hyperlinking.

In 2001, in Washington, D.C., the Smithsonian Associates sponsored a workshop entitled "Storytelling: Passport to the 21st Century." In it, John Seely Brown, chief scientist of Xerox and chief innovation officer, asked, "What are the implications when technology is brought into the storytelling process?" His answer, in part, was that "everyone will find something of interest—but it won't be the same thing".¹⁶ Brown suggested that technology is a tool to explore the oral tradition in new ways.

COMPLEXITY THEORY AND THE EMERGENT PROPERTIES OF INFORMATION SYSTEMS

The concept of complexity as an information theory was developed by Andrey Kolmogorov, Ray Solomonoff, and Gregory Chaitin in the late 1960s and is applicable to the information systems that support online education.¹⁷ These can also be technically described as *complex systems* consisting of interconnected or interwoven parts that interact in such a way as to produce an often unpredictable global output.¹⁸ A central concept in the science of complexity is *emergence*, and complex systems demonstrate what will be referred to here as *emergent properties*.

An emergent property is a property that individual components of the system do not necessarily display but from which emerges the evolution of the system as a whole. Some might say that the whole is more than the sum of its parts;¹⁹ others might argue that it is more correct to say that the whole is something else than the sum of its parts.²⁰ The study of emergent properties in information systems, when people are involved, must necessarily include the humanization of the information cycle. Recent research on the emergent properties of human interaction with information systems have included studies of identity and culture, small-scale societies, and complex systems.²¹

This study analyzed pedagogical strategies for the use of multimedia technologies (digital storytelling performances) to teach a graduate-level course on storytelling to an online learning community via a Web-based online learning information system. An analysis of course-related discussion posts collected from students over a two-year timeline revealed unexpected outcomes—emergent properties—that give insight about the value-added benefits and gaps in teaching storytelling online.

METHOD

Ethnographic research methods have advantages and disadvantages for this type of research. Contemporary research studies that include the collection of electronic communications, commentary, and stories to study distance education or the use of the Internet, cyberspace, and computer-mediated communication by online communities are not new. Since the first e-mail was sent in 1971,²² the study of use patterns and electronic communications research has been continually taking place.

As a general strategy, empirical ethnographic methods and participant observation research have gained popular acceptance in a variety of disciplines and have potential for generating social-scientific explanation and prediction capabilities. Anthropologists have long regarded culture as a kind of information system. A new form of research, coined *nethnography*, is being employed with a range of studies looking at online/Internet communities, such as specific populations of

people, folk communities, affinity groups, scholarly communities, and gendered groups, and it has potential application to any group that converges in electronically based environments.²³ Other related research includes ethnographic strategies for virtual communities, ethnomethodology in online communities, virtual ethnography, and reflexive e-learning.²⁴

Research that considers in a systematic way the ethnographic techniques of observing and understanding what people say and do takes both *emic* and *etic* interpretations into account. When analyzing human society, the emic perspective represents what things mean to the members of a society, and the etic perspective represents what things mean from an analytical, anthropological perspective, or the lens of the researcher.²⁵

The research design and methodology for this study addressed two key research questions:

1. *Emic view*: What are the student perceptions of multimedia use in an online storytelling course? (In relation to the key research questions in this study, *multimedia* pertains to digital video recordings of storytelling performances and storytelling-related training techniques/demonstrations in digital video form.)
2. *Etic view*: What are the emergent properties of multimedia use based on the student's perceptions?

The data collection methodology used in this study was focused on collecting artifactual and documentary evidence depicting what students say and do from the students themselves via their online discussions in the course discussion forums. A process of data coding was employed on the collected documents (the online discussion posts, also referred to as *posts*) to develop categories, patterns, and other organizing and grouping processes to bring the data to order for analysis and interpretation. Strauss and Corbin, in *Basics of Qualitative Research*, generally describe coding as the analytic process by which data are fractured, conceptualized, and integrated to form theory. The procedure of coding involved multiple readings of the document texts and assigning a particular code to words, sentences, concepts, and so on. As concepts developed into theoretical ideas, notations were made to further explore them and develop them into a classification scheme. This technique matches in some ways with nonclassical anthropological methods, such as reciprocal ethnography in which the process of engaging with the students via their online discussions results in the generation of products that can be used for analysis.

This work and the data are drawn from two years of research conducted while I was the course owner, content developer, architecture designer, and professor teaching semester-length three-hour graduate-level courses, 100% online, to over 325 students. The course, officially titled Storytelling for Information Profes-

sionals (see <http://courses.unt.edu/efiga/Figa/CoursesIndex.htm>), is taught three times per year as part of the standing course curriculum in an American Libraries Association–accredited School of Library and Information Sciences. The course is supported via a commercial web-based course technology called WebCT or WebCT VISTA,²⁶ a flexible integrated environment using the latest instructional technology to foster inquiry, encourage discourse, and inspire collaboration. WebCT allows the presentation of course content that combines text, graphics, full-motion video, and sound in an integrated package, which also supports online open and private discussion forums, real-time/live chats, and e-mail. WebCT offers infrastructure to support homework submissions, surveys, various tools, gradebooks, and more. In each course, students are separated into groups or cohorts, with 12–15 students per group. These cohorts stay together for the entire semester, and each cohort has a doctoral- and/or master’s-level faculty member assigned to it to support group discussion and grade the students’ assignments and storytelling performances.

This course is distinctive in that it features the use of multimedia in two ways:

1. *Educational multimedia prepared by the faculty member for students.* The term *multimedia* pertains to recordings of storytelling performances and storytelling-related training techniques/demonstrations (such a physical or vocal warm-up) in digital video format. All of the videos are recorded in studio before a real-time/live audience, and the media production is done by a professional video and sound crew using a two-camera setup edited for commercial professional quality. The course features fifty-one digital video recordings of storytellers, ranging from two minutes to fourteen minutes, as well as several training videos by the course instructor, which are streamed over the Internet for student viewing. The multimedia is situated within in the WebCT course architecture and is distributed across a series of 13 weekly content modules. The digital video performances provide different perspectives and content for the teaching of storytelling. The professional performers each do two to five storytelling performances recorded before an audience, and they also record introduction videos about themselves with discussion of some aspects of professional storytelling life from their experiences. There are also several question-answer interview recordings with professional performers. All video performers sign a release allowing full use of their likenesses (video performances) in the courseware. As a pedagogical device, these videos are fair game for deep critique and analysis in public discussions between the faculty and students.

2. *Multimedia materials prepared and submitted by students as part of their coursework assignments.* The course provides training and instruction on the use of audio and video technologies, and it requires students to submit three recorded storytelling performances (two digital audio recordings and one video). The video performance is recorded as performed real-time/live with an audience. The video

submission requires two formal story performances with introductions as well as a separate warm-up demonstration. The two audio and video recordings submitted by students are processed in a multimedia lab to streaming media and are added to the courseware to be played over the Web within the WebCT framework during the time that the students are taking the course. The streaming-media storytelling performances done by the students receive faculty review for grading and private commentary and instruction. The digital audio and video performance recordings also undergo student listening and viewing in their cohort groups for peer praise and appreciation. WebCT supports faculty and student-led discussions regarding all of the media used in the course, and students are required to post in discussion to some specific elements regarding the multimedia in all thirteen modules.

From Fall 2001 through Fall 2003, I taught the master's-level storytelling course eight times. Throughout those courses, there has been a formal process to collect and analyze publicly submitted posts from the course discussion boards that construct and reflect the lore of the community and student views on multiple aspects of the course and its content. The discussion requirements for thirteen weekly modules of coursework include a standard statement: "Participate in the Discussion Forum: Make germane and trenchant commentary about the readings, activities, video/audio files, Website resources, and other module-related topics." This required discussion post assignment results in an open discussion structure for students to discuss what strikes them as most interesting, and it allows for natural exchanges among students on the threads that individual students introduce. There are also several special post assignments; for example, in the week that digital and virtual storytelling is studied, students are assigned an extra post to comment on the skills and attributes of a particular performer. In addition to reading and participating in the required weekly posts and the special posts, students also self-initiate threads of discussion and respond with follow-up posts to their peers. This posting cycle informs the highly dialogical nature of the course.

As a bare minimum expectation, each student is required to contribute twenty posts for the entire course; however, averages are significantly higher than that. As to the number of students enrolled in the courses from which data were extracted, the lowest number in any one class was seventeen students in one summer session, and the highest number was eighty students in one fall session. The number of students whose work was considered as part of this research was 274. Men comprised approximately 8% of the class enrollment (men comprise 18% of the total enrollment in the school). In overall post counts for the courses from which the data were gathered, the lowest number of total posts for a single course was 2,100, and the highest number was 6,001. In total, 22,000 posts were analyzed from all courses.

Doing the research in this electronic community has resulted in collection methods well aligned with classic methods of anthropology.²⁷ The students were aware that I was monitoring and grading their posts; however, they were not aware that I

was collecting posts for research purposes. There was no specific discussion assignment concerning critiquing the multimedia. However, over time, many posts included comments on the use of the multimedia technology and student perceptions of video use for learning or enjoyment. All discussions posts that were specific to multimedia were extracted and considered for inclusion as the data set for this study. The resulting data set comprised 262 individual posts pertaining directly to the multimedia technology. Criteria for selection of discussion posts for analysis related to this study were established and included in the data set as follows:

1. all posts that had commentary on the use, effectiveness, perceptions, and/or other insights on the use of the multimedia materials;
2. all posts for which the content was focused on the multimedia and its use as examples for teaching or analysis;
3. all posts with content of substance and enlightened thought—and not, for example, comments such as “I like the videos this week”;
4. only posts written by students (no posts by faculty were included).

Of the 262 posts, the average length was three paragraphs, with occasional full-page entries. Every post in the data set featured germane and trenchant comment on multimedia technology; however, many of the posts covered multiple topics. Posts from the students are automatically imbedded with identifying data by the information system to track them. These data include a message number, post number, a unique student-identifier string with number and letters,²⁸ and a date/time stamp. These data have been retained in the representative posts; however, the formal names of students normally associated with the posts have been removed. Please note that posts retain precise wordings and sentence constructions, including typographical errors, parentheticals, point of emphasis, and so on, as originally written by the students.

LIMITATIONS

A clear limitation of this study pertains to use of this single data source, the online discussion posts, which are a requirement for completion of the course. It is certainly valid to question whether discussion comments would be substantively different if discussion posting was an anonymous process.

FINDINGS

In analyzing the data, I considered the whole-part relationship related to student participation within this complex system (the online learning information environ-

ment) and the students' discussion posts regarding the use of multimedia digital storytelling technologies. Analysis of sociocognitive patterns of discourse identified a number of unexpected or unpredictable outcomes (emergent properties). A classification scheme was developed at a meta-level that represents four classification groups of emergent properties that I identified. Each classified group has a bulleted list that details a subclass or subset of related emergent properties. Each classified group and bulleted list is followed with specific data about the number of student posts related to this classification, as well as a small sample of discussion post comments related to various emergent properties.

I. Meta-level Classification: Emergent Properties Related to Multimodal and Associative Intertextual/Intermedial Information Processing

- Iterative processing of course information
- Content- and multimedia-replay opportunities; ability to revisit past discussions and course content on specific topics
- Unexpected linkages and combination of content elements
- Development of mental associations and ability to follow individual paths of interest to own the learning process rather than have it driven by the teacher
- Cognitive mapping for mental associations in content understanding and technique assimilation

In this classification, 44 of the 262 posts in the data set pertained to multimodal and associative intertextual/intermedial information processing. A sample of three evidentiary discussion post extracts related to these properties follows:

Message no. 2414 Posted by (ljw9999) on Friday, November 22, 2002 8:07pm

Digital performance allows you to *Study* the storyteller, you can play the clips repeatedly and listen to the inflections in their voice, the way they use their body, and their pacing, tone, etc. It allows you as a student to experience multiple types of storytellers and performances, both professional and novices.

Message no. 7682 Posted by (bsp9999) on Sunday, November 23, 2003 11:02pm

The ability to watch examples of storytelling has been extremely helpful to me in this class, especially since I'm a "show-me" type learner who likes repetition.

Message no. 3180 Posted by (blt9999) on Sunday, November 24, 2002 7:32pm

Digital storytelling provides methods of preserving and sharing stories which never could have been done before. And, the digital stories I have seen or heard have been played over and over again, providing a chance to catch nuances and subtleties not obvious in the first playing. You can see body language, facial expressions, and

the person's eyes. You can hear tone of voice and inflection. You may not see the storyteller adjust to the audience, but almost all other techniques of good storytelling can be identified.

II. Meta-level Classification: Emergent Properties Related to Improvements, Enhancements, and Use of the Online Teaching Information System Environment

- Students become co-creators of course content—courseware development contributions made by the students enhance self-esteem
- Students suggest new ideas for use and changes in the information system
- Students discuss future information systems capabilities and transformations
- Students reflect on online database of available stories
- Linkages to other types of online discussion forums and Internet-based information sources about storytelling
- Allows for equal participation by all students
- Teacher improves the information systems and course content/materials based on student feedback

In this classification, 39 of the 262 posts in the data set pertained to improvements, enhancements, and use of the online teaching information system environment. A sample three of evidentiary discussion post extracts related to these emergent properties follows:

Message no. 814 Posted by (tac9999) on Tuesday, July 1, 2003 10:37am

The whole digital storytelling experience has been quite enlightening. We have not only been able to listen and view stories online, but record and post our own using this technology. All of this while getting up to the minute guidance and encouragement from our professor half a world away.

Message no. 7620 Posted by (aju9999) on Sunday, November 23, 2003 4:34pm

When I first mentioned to a fellow librarian that I was going to take a storytelling class online she was a little appalled. Well, we have had the privilege of not only hearing and seeing one another tell stories but several previous students and of course professional storytellers as well. The diversity and number of storytellers we were able to hear and learn from the collection was probably far greater in number than in a traditional class. It was almost too much and perhaps the instructor can allow us to select videos with the types of genres and skills we want to study to give us focus.

Message no. 4393 Posted by (dsh9999) on Sunday, April 20, 2003 9:08pm

I want to make some comments. I just finished listening to all of [storyteller name omitted] stories and I was spellbound by them. As I think about the influence she had on me, even though it was an electronic transmission, I feel this is a testimony of how

digital storytelling can still be a wonderful tool in storytelling. It is a powerful tool that gives me and others that opportunity to see, hear and study things we would otherwise not have the opportunity to do because of online education.

III. Meta-level Classification: Emergent Properties Related to Storytelling Skills Development, Professionalization and Networking

- Development of personal definition of storytelling self and storytelling identity
- Improvement of individual storytelling skills and performance techniques via feedback loop
- Confidence in self-critique via rehearsals/media reply
- Excitement about performing opportunities
- Seeing exemplars of performances skills of various tellers to broaden the imagination
- Ability to see and discuss a variety of performers, analyzing styles, nuances, and types of stories told for knowledge and skills development
- Ability to see a variety of performers and analyzing style for hiring purposes
- Peer contact development, which leads to professional contacts outside of the course
- Sharing skills and knowledge to enable others to perform and collect their stories
- Knowledge of storytelling program and concert development in their professional role
- Sharing skills and knowledge to enable others to develop, collect, or access multimedia storytelling performances
- Assimilating knowledge of cultures, history, and trends in storytelling

In this classification, 233 of the 262 posts in the data set pertained to storytelling skills development, professionalization, and networking. A sample of four evidentiary discussion post extracts related to these emergent properties follows:

Message no. 310 Posted by (jjb9999) on Friday, November 22, 2002 4:51pm

I have to admit that I was skeptical at first about this class, about not seeing anyone face-to-face, but it has been one of the most enjoyable and fulfilling classes I have taken. One advantage I experienced was opening up to new possibilities and new ways of doing storytelling. I'm glad we started with audio files, because that allowed me to summon my courage and tell my stories without fear of things. For me, it was all about how I could develop my own sense of storytelling (finding the "voice" within myself).

Message no. 315 Posted by (gpw9999) on Sunday, November 24, 2002 5:21pm

The digital environment as established in this class is particularly inviting for the more introverted / less experienced would-be storyteller who is hesitant to expose him / herself to the ‘world’ from day one. Like me. Now we are able to tape ourselves storytelling and go back and watch and watch and watch to learn how to improve upon our performance. We have the same luxury of “replay” when watching others in a digital world.

Message no. 7598 Posted by (sll9999) on Sunday, November 23, 2003 12:46pm

Just this week, my school had [storyteller name omitted] do storytelling for Children’s Book Week. I first experienced her in this class via digital storytelling and thought she was great and networked to hire her. However, after seeing her in person and being able to compare the two, there is no comparison. Being there and seeing the students (and myself) react to her and especially her react to and with us is something that can’t be done with digital storytelling.

Message no. 842 Posted by (vss9999) on Tuesday, July 1, 2003 11:01pm

Uniting culture through technology is perhaps the greatest advantage of digital storytelling. People may learn through experience that we are more similar than different in many respects. This eventually results in cultural awareness and tolerance for us storytellers.

IV. Meta-level Classification: Emergent Properties Related to Personal Benefits

- Students can consolidate course content for future use and application
- Preservation of personal performances for use and reference
- Skills and knowledge to develop new multimedia to collect, preserve, and re-hearse their own stories and develop their own multimedia collection
- Stress reduction, emotional expression and support, optimism, hope, healing
- Greater confidence in other forms of public presentation
- Expansion of personal knowledge about digital storytelling and multimedia

In this classification, 218 of the 262 posts in the data set pertained to personal benefits. A sample of four evidentiary discussion post extracts related to these emergent properties follows:

Message no. 7677 Posted by (br9999) on Sunday, November 23, 2003 10:34pm

Since taking this class, I have started recording stories of my family for my son and his family to listen to once all of us are long gone. The benefits of digital storytelling are many, and include exposure. It is possible for so many people to see your stories with the click of a mouse. I also love how you can add graphics to your storyboard, and music, and special effects. It’s like making your own storytelling movie.

Message no. 7659 Posted by (alm9999) on Sunday, November 23, 2003 9:31pm

I think that Digital Storytelling is a wonderful gift of our ever growing technology driven world. I also think that the storytelling that we experienced in this class was emotional on occasion. I laughed out loud and wiped tears from my eyes as a result of several digital stories that I heard.

Message no. 3188 Posted by (clf9999) on Sunday, November 24, 2002, 8:05pm

I think digital storytelling took some of the fear of performing or being in front of people away. I was allowed to gradually ease into the visual element. It will sure to be helping me not only in this class!

Message no. 4354 Posted by (paw0015) on Sunday, April 20, 2003 6:23pm

I did a collection preservation research paper in one of my classes, and this idea really hit me hard. Here we have all of this technology and so many aren't using it to preserve so many treasures. Storytellers alive today need to be hyper aware of this, I think.

DISCUSSION

A professor envisions one's own course to be well designed and well planned with learning objectives and goals established to direct course content toward the development of knowledge and skills on the subject matter. Transforming a course such as storytelling, which is so deeply rooted in the oral tradition of performance, to an online version for distance education required a large investment in the development of online content and multimedia materials. Student feedback on the course via formal course evaluations can be useful in assessing student opinions about course materials, content, and satisfaction with the experience. However, the information is often limited to standardized questions and may not inform an instructor on specific aspects of a course or on key content for which time and resources have been invested.

In online courses, information becomes embedded in the everyday discussions of students that can prove valuable in providing insight about the impact of course instruction and content. Data resulting from every day discussions reveal that students have varying viewpoints, ideas, and perceptions about the multimedia digital recordings of storytelling performances. The data also reveal the shared meanings, associative connections, and emergent properties related to online learning that form global properties useful for predictive and evaluative purposes. As well, the data reveal that online teaching of storytelling and the use of multimedia result in the acquisition of many of the skills and knowledge that would emerge from a real-time storytelling class environment. Understanding the impact of multimedia resulted in drawing on theories of complexity and emergent properties to analyze student-initiated discussion board postings directly related to the media.

As a teacher, I can expect, predict, and hope for outcomes such as the following: that the majority of students will pass the course; that a few students will have trou-

ble with their self-produced video production work; that some students will complain about the courseware technology; and that most students will say that they found the class a positive experience. I also predict that students who chose to take an online course such as storytelling would indeed miss doing storytelling in the real-time in-person format. The multimedia technologies and pedagogical strategies used in the course offer an alternate paradigm that moves away from text-based online learning to the more experiential-based instruction extant in real-time storytelling courses and seminars. The use of multimedia as a modality to model storytelling performance skills and techniques fosters the ability of students taking an online class to do storytelling in traditionally applied ways—but, in this case, by submitting their performances in digital media form versus performing in real-time/live classroom performance. The information system that supports the community allows for dissemination and retrieval of the recorded storytelling performances and supports a different kind of feedback loop. Many students affirmed in their discussions the benefits and pleasures of being able to replay and discuss the videos of the professional performers and their peers. However, the system and the online format clearly do not provide the benefits of real-time/live storytelling and the immediacy of the human communication feedback loop.

Multimedia applications to support digital video storytelling performances allow students to experience faculty and peer review of their recorded storytelling performances, as well as develop technology skills to create their digital media and contribute their videos to the course content. While the information system currently does not support the dynamics of real-time/live storyteller-audience interaction, all students are required to do a real-time/live storytelling performance with an audience, which they record in video form and submit as part of their course work. So the students do personally experience the storytelling-with-an-audience feedback loop and are able to draw on that experience in their coursework. The benefits of using multimedia to emulate/replicate the traditional teaching strategies for oral storytelling performance development and the information system allows for simulation of the many experiences and benefits of storytelling in real-time settings, classes, or workshops.

The virtual presence of teachers, students, and professional performers is achieved via the online courseware. There are weaknesses with the system—as the students attest—in that the online experience of storytelling is missing the feedback loop that allows for visual cues, audience dynamics, ambiance, and other pleasures of engagement in real-time/live storytelling or classroom experiences. However, the data from the study indicate there are some value-added emergent properties and iterative learning opportunities unique to the online learning environment that do not appear in real-time/live classroom settings.

Online asynchronous and collaborative learning opens up individual and group learning paths based on the learning style and needs of individual students and small groups via associative systems. These systems allow students to discover

and develop different associative patterns and intertextual/intermedial relationships. A key pedagogical uniqueness of the system lies in the ability of the student to replay the multimedia or revisit discussions and to zoom or scan for information retrieval to their specific interests or learning style. For example, in Meta-level Classification III: Storytelling Skills Development, Professionalization, and Networking, if a student wants to learn more about how to have more powerful or more effective story openings, any time of day or night, the student can review the opening segment of all of the professional performers' storytelling videos and compare and analyze the different styles of introduction and openings with the lecture content and discussion on this aspect of performance. This can be accomplished only by mental recall or reflection based on performances done in the real-time/live classroom setting.

Perhaps in an ideal storytelling teaching/learning system, students have the benefit of the aesthetic and dynamic experience of the real-time/live classroom storytelling experience, as well as the recursive and iterative opportunities of information systems available in the virtual classrooms. In the case of real-time classroom experiences, there may be benefit in adopting some of the value-added techniques that emerge in online communities that allow for replay opportunities and linkages of course content based on student's individual learning styles and needs. In the case of online learning communities, there is a need to advance technologies to acquire more of the real-time benefits of visual cues and aesthetic pleasures of real-time/live human interaction for storytelling. A third scenario, perhaps the most ideal, is to promote a hybrid class that allows for a community to experience the value-added benefits of new technologies and asynchronous/group learning experiences in an online format and to be brought together for real-time opportunities to experience the pleasures of live storytelling and the immediacy of the human communication feedback loop.

PERSONAL REFLECTIONS

I admit that it was with confidence (influenced by expressions of horror by others) that I chose to embark on this journey to explore online teaching for storytelling. A grant of \$8,000 and a pledge of financial support to bring in professional performers to record for the course were a major jump start. The course description and objectives have broad coverage and can be found at <http://courses.unt.edu/efiga/FACULTYPAGE/SLIS5440SyllabusInformationPage.htm>.

In truth, I was less worried about the delivery of didactic content in the online environment. However, I was initially mystified and challenged about how to teach storytelling performance and artistry online and how to find technologies that would support students and their telling of stories to one another. The key was easy-to-use tools that students could master. Research and experimentation identi-

fied a variety of possible tools—for example, PureVoice, a free easy-to-use downloadable digital voice-recording software that has been a mainstay technology for this course, along with RealMedia for streaming the video over the Internet. But the transitional moment of empowerment that sent me headlong into launching the course occurred in a conversation that I had with renowned storyteller Elizabeth Ellis. She agreed to come to campus and go into the studio to record for my course before I really knew what I was doing. I will never forget her words in that preliminary conversation, which were delivered in her oft-brassy style: “You know, I think you are really onto something, and we will be all the better for you kicking up some dust and scaring the pants of those who say it can’t be done.”

IMPLICATIONS AND FUTURE RESEARCH

Storytelling is ripe with potential for research, so I focus this section to suggest implications and future work related broadly to teaching online and, specifically, on the needs for teaching storytelling online or via distance education technologies.

Institutional support for online learning is a must for anyone embarking on the journey. Ensure that you understand your intellectual property rights and the policies on your campus. You will likely need to learn more about interactivity and the facilitation of online learning than you realize. You know your content; the challenge is to translate that content to a new learning environment.

On your campus or in your organization, support and research about online teaching should be a priority. Meeting the online teaching needs of distance and local students 24/7 is a huge commitment. The interactivity demands of online teaching will require thinking out of the box and similarly require you to empower students with part of the interactivity role. Peer-to-peer interaction will increase in multitudes, and netiquette issues, communication and learning styles, and student management will become part of the pedagogical strategy of your courses. Evaluations will likely need to be revised to ascertain learning outcomes, satisfaction, and other factors that can affect retention in online courses.

Training for faculty and students is essential, and documentation and instruction about the architecture, logistics, content, and inner workings of your online course are critical for student success. Develop a network of online teachers and support staff to share experiences and ideas, via brown-bag lunch meetings, a listserv, an online blog, and so on.

You will likely spend years learning instructional design to write, develop, implement, evaluate, and revise courseware and course content for online learning. Consider this a long-term proposition.

Once you move into online learning, new technologies will be part of the game plan for perpetuity. Online learning systems are constantly evolving, and consumers (especially, young adults) are eager for application of the latest gizmos. If you

Podcast it, will they come? You will also expand your linguistic and sleuthing skills as you learn about bandwidth, extensibility, and the many challenges related to plagiarism and online teaching (see link to distance learning glossary).

Research on faculty-student online relationships and partnerships, particularly for storytelling, will be critical to ascertain successes and satisfaction. Many online learners have strong consumer expectations for service. The development and use of multimedia and multimedia tools are critical to support the teaching of the performance aspects of storytelling and storytelling as an art form. Emergent technologies include new voice tools for recording and real-time conversations, as well as live streaming media and Podcasting. New ventures being supported by National Science Foundation grants are underway to develop enhancements in online learning systems for tutoring and assessment, modeling and sensing of cognitive or emotional states, context awareness, natural language interfaces, collaboration, and knowledge management.

Other future studies might include the use of agent technologies as a form of interactivity or multimedia to facilitate online learning, information systems that accommodate self-organizing group interaction, opportunities to build social and learning networks with those with similar interests, and Web-based systems that allow for optional presence revealing so that students could follow their own paths independently or join others in a collaborative learning experiences.

Elizabeth Figa, Ph.D., is an assistant professor in the School of Library and Information Sciences at the University of North Texas and is a fellow in the Texas Center for Digital Knowledge. Her current research interests center on information retrieval and human information systems, ethnography of storytelling and the oral tradition, storytelling as information science, online learning and distance education, and multimedia development/applications for use in pedagogy. The funding for the multimedia discussed in this research was awarded from the University of North Texas Center for Distributed Learning Teaching with Technology Grant.

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APPENDIX

GLOSSARY OF TERMS

Complex system: A system consisting of interconnected or interwoven parts that interact in such a way as to produce a global output that cannot always be predicted.

Complexity theory: Complexity theory attempts to understand fundamental relationships and causes and effects of complex events of physical or social origins.

Digital storytelling: The process of presenting text-based narrative, voice, images, video, and music in a digital environment that “provides a unique opportunity for stories to be manipulated, combined and connected to other stories in an interactive, and transformative process that empowers the storyteller and invests the notion of storytelling with new meaning.”²⁹

Emergent property: A characteristic of a system that derives from the interaction of its parts and is not observable or inherent in the parts considered separately. An emergent property is a property that a complex system has but that the individual components of the system do not necessarily have. An emergent property of something is an attribute that emerges from the whole, a higher-level entity that encapsulates or includes lower-level entities but not the sum of them. Emergent properties are not demonstrated by the parts and cannot be predicted a priori even with full understanding of the parts.

Interactive storytelling, interactive fiction, interactive drama: Text-accepting, text-generating storytelling media that produces narrative during interactions that are constructed via structured rules or rule-based algorithms in a computer-generated or mediated world. The process is driven by an interactor who plays an active part in the course of the storytelling from a first-person perspective by interacting with other simulated characters. It features multiple storylines capable of developing a complete dramatic arch. New models feature artificial intelligence-based developments in electronic narrative that move beyond traditional branching or hyperlinked narrative to create a fully realized interactive drama (see Mateas and Stern), interactive character behaviors, and natural-language discourse, with some featuring real-time three dimensional worlds.

Iterative: Characterized by or involving repetition, recurrence, reiteration, or repetitiousness.

Multimedia: Refers to the delivery of information that combines different content formats—motion video, audio, still images, graphics, animation, text, and so on.

Virtual storytelling: The newest term for computer-based storytelling and story generation featuring the use of virtual reality, artificial intelligence, and agent technologies. These systems are perceptual and sensorial in nature and create virtual worlds via graphical interfaces constructing immersive environments and involving natural-language processing systems. Two-dimensional and three-dimensional environments (or virtual theaters) as well as avatars (or conversational characters) driven by agent technologies interact with users in real time.

NOTES

¹“The Call of Story,” <http://callofstory.org/en/storytelling/>, accessed February 12, 2005.

²See glossary.

³Bannan-Ritland’s “Computer-Mediated Communication, eLearning, and Interactivity” addresses the application of theoretically based instructional strategies in the design and development of constructivist learning environments.

⁴Jones’s *Cybersociety* explores the mediation of community in electronic networks.

⁵Kollock and Smith’s “Communities in Cyberspace” explores the double-edged sword of a variety of online interaction types where communities of people connect to each other.

⁶Börje Holmberg has published articles and books on a variety of aspects on the topic of distance education (see *Growth and Structure of Distance Education*).

⁷In “The Benefits of Online Learning,” Sinclair specifically addresses issues pertaining to self-education online and the benefits/challenges.

⁸See “E-Learning and All That Jazz” for a discussion of these issues.

⁹The Lumière brothers produced what is historically considered “the first real cinema show.” (see <http://inventors.about.com/gi/dynamic/offsite.htm?site=http://www.acmi.net.au/AIC/MOVIE%5FHIST%5FMOMI.html>, accessed February 12, 2005).

¹⁰In “Elearning Communities,” Chih-Hsiung and Corry discuss the strengths, weakness, and impact of electronic communities on human learning.

¹¹Current scholarly discourse about online learning and distance education include discussions of its changing paradigms (see Howard Schenk, and Richard Discenza’s *Distance Learning and University Effectiveness*), culture and community issues (see Haythornthwaite and Kazmer’s *Learning, Culture, and Community in Online Education*), the design and management of distance learning programs (see Discenza, Howard, and Schenk’s *The Design and Management of Effective Distance Learning Programs*), the impact of new media on relationship ties in online environments (see Haythornthwaite and Kazmer’s “Bringing the Internet Home”), issues concerning adult distance learners (see Haythornthwaite and Kazmer’s *Learning, Culture, and Community in Online Education*), and temporal and technology impact on online community development (see Haythornthwaite, Kazmer, Robins, and Shoemaker’s “Community Development among Distance Learners”).

¹²A study by Northrup in 2002 (“Online Learner’s Preferences for Interaction”) investigated types of interactions (content, conversation, collaboration, support systems, etc.) that graduate students perceived to be important for electronic learning.

¹³Rovai (“The Relationships of Communicator Style”) examined individual personality, learning, and communication styles among graduate student online learners. Ghinea and Chen (“The Impact of Cognitive Styles”) examined cognitive styles and perceptions.

¹⁴“Digital Video for Education,” <http://archive.ncsa.uiuc.edu/Cyberia/DVE/FusionDVE/>, accessed February 12, 2005.

¹⁵Several studies address the issues of learning and digital media. See Chuang’s “Teaching in a Multimedia Computer Environment”; Garrett and Callear’s “The Value of Intelligent Multimedia Simulation”; Kearney, Tregust, Yeo, and Zadnik’s “Student and Teacher Perceptions”; Subic and Maconachie’s “Flexible Learning Technologies and Distance Education”; and Bressan, Silveira, and Ruggiero’s “A Framework for Distance Learning.”

¹⁶See <http://www.creatingthe21stcentury.org/JSB.html> (accessed July 11, 2006).

¹⁷“Algorithmic Information Theory,” http://en.wikipedia.org/wiki/Kolmogorov_complexity, accessed March 1, 2005.

¹⁸“Digital Video for Education,” <http://archive.ncsa.uiuc.edu/Cyberia/DVE/FusionDVE/>, accessed February 12, 2005.

¹⁹“Philip Galanter,” <http://www.philipgalanter.com/index.html>, accessed February 12, 2005.

²⁰Koffka’s work (see *Principles of Gestalt Psychology*) has become fundamental to several disciplines, including instructional design and learning theory.

²¹See Ikegami’s “A Sociological Theory of Publics”; Read’s “Emergent Properties in Small-Scale Societies”; and Damper’s editorial “Emergence and Levels of Abstraction.”

²²Moschovitis and colleagues’ *A History of the Internet* presents a history of factors and technological advances that formed the Internet.

²³See Ignacio’s “Pilipino ka, ba?” for a discussion of the communities.

²⁴For research on these communities see Paccagnella’s “Getting the Seats of Your Pants Dirty”; Thomsen, Straubhaar, and Bolyard’s “Ethnomethodology and the Study of Online Communities”; Hine’s “Virtual Ethnography”; and Berge’s “Active, Interactive, and Reflective eLearning.”

²⁵Kathleen A. Dahl, “Definitions of Key Terms,” <http://www2.eou.edu/~kdahl/emidef.html>, accessed February 12, 2005.

²⁶WebCT: <http://www.webct.com/>.

²⁷See Ruhleder’s study “The Virtual Ethnographer.”

²⁸The unique student identifier strings used in this analysis have been altered by changing the thread of numbers to 9999 in all cases to prevent the identification of individuals.

²⁹Digital Storytelling Association: <http://www.dsaweb.org/01associate/ds.html>.